IOWA DOT

Highway Division

J30-06 CONTINUOUS CONCRETE SLAB BRIDGE STANDARDS

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INDEX FOR J30-06 STANDARDS:

REVISED 06-2013: THE GENERAL NOTES AND SPECIFICATIONS MOVED TO STANDARD SHEET J30-01A-06.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

INDEX SHEET

J30-01-06

GENERAL NOTES:

THE J30-06 BRIDGE STANDARDS, IF PROPERLY USED, PROVIDE THE STRUCTURAL PLANS NECESSARY TO CONSTRUCT THREE SPAN 30′ ROADWAY CONTINUOUS CONCRETE SLAB BRIDGES WITH LENGTHS OF 70′-0, 80′-0, 90′-0, 100′-0, 110′-0, 120′-0, 130′-0, 140′-0 AND 150′-0.

THESE BRIDGES MAY BE BUILT ON A 0°, 15°, 30° OR 45° SKEW. THESE PLANS SHOW THE BRIDGES SKEWED IN ONE DIRECTION, BUT ALL DIMENSIONS AND DETAILS WOULD BE THE SAME FOR THE OPPOSITE SKEW.

THESE STANDARDS GIVE MOST OF THE INFORMATION NECESSARY TO BUILD THESE BRIDGES. HOWEVER, THE FOLLOWING ADDITIONAL INFORMATION IS REQUIRED FOR USE ON PRIMARY ROUTES. FOR SECONDARY ROUTES THE ENGINEER MAY NOT REQUIRE ALL SHEETS TO BE PROVIDED:

1. TITLE SHEET WITH ENGINEERS SEAL
2. ESTIMATED QUANTITIES TOTALS INCLUDING CLASS 20 EXCAVATION FOR BRIDGE
3. SITUATION PLAN LAYOUT OF BRIDGE
4. TOP OF SLAB ELEVATIONS LAYOUT
5. BOTTOM OF ABUTMENT FOOTING ELEVATIONS
6. BOTTOM OF PIER CAP ELEVATIONS
7. PILING DESIGN INFORMATION
8. SLOPE PROTECTION LAYOUT IF NEEDED
9. CONDUIT LAYOUT
10. LIGHTING LAYOUT IF NEEDED

FOR CLARITY, MOST SECTIONS SHOWN ON THE FOLLOWING SHEETS ARE DRAWN WITH BARRIER RAIL ONLY. THESE SECTIONS WILL BE IDENTICAL FOR OPEN RAIL DESIGN WITH ANY MODIFICATIONS SHOWN ON SHEET J30-43-06 AND J30-44-06.

THESE BRIDGES ARE DESIGNED FOR HL93 LOADING PLUS 20 LBS. PER SQ. FT. OF ROADWAY FOR FUTURE WEARING SURFACE. CONTROL OF CRACKING BY DISTRIBUTION OF REINFORCEMENT FOR SLAB DESIGN BASED ON PRE LRFD 2005 INTERIMS.

NOTE THAT WHEN APPROACH PAVEMENT IS TO BE PLACED, THE TEMPORARY PAVING BLOCKS SHALL BE REMOVED AND A PROPER JOINT FOR EXPANSION SHALL BE PROVIDED BETWEEN THE BRIDGE AND THE APPROACH PAVING.

THE FLOOR SLAB AS SHOWN INCLUDES $\frac{1}{2}$" INTEGRAL WEARING SURFACE.

THE ABUTMENTS FOR THESE BRIDGES ARE BUILT INTEGRAL WITH THE SUPERSTRUCTURE. THEREFORE, IT IS IMPORTANT THAT A PROPER JOINT FOR EXPANSION BE PROVIDED BETWEEN THE BRIDGE AND APPROACH PAVING, WHEN APPROACH PAVING IS NEEDED.

THE ABUTMENT DESIGN UTILIZED ON THESE BRIDGES RESTRICTS THEIR USE IN THE FOLLOWING MANNER:

(1) THESE BRIDGES ARE NOT TO BE USED WHEN POINT BEARING FOR THE ABUTMENT STEEL PILING WOULD BE OBTAINED ON ROCK AT A DISTANCE LESS THAN 15 FEET FROM THE BOTTOM OF FOOTING.

(2) FOR THE 140 FOOT AND 150 FOOT LONG BRIDGES THE ABUTMENT PILING ARE TO BE DRIVEN THROUGH OVERSIZED HOLES PREBORED TO A MINIMUM OF 10 FEET BELOW THE BELOW THE BOTTOM OF FOOTING. THE PREBORED HOLES SHALL BE IN ACCORDANCE WITH SECTION 2501.03, Q OF THE STANDARD SPECIFICATIONS. THE ELEVATION OF THE BOTTOM OF THE PREBORED HOLE SHALL BE SHOWN ON THE PLANS.

(3) IF ROCK IS ENCOUNTERED LESS THAN 5 FOOT BELOW THE PREBORED HOLES, A SPECIAL ANALYSIS WILL BE REQUIRED. WHEN PREBORING IS NOT REQUIRED FOR THE ABUTMENT FOOTING AND ROCK IS ENCOUNTERED LESS THAN 10 FOOT BELOW THE BOTTOM OF ABUTMENT FOOTING, A SPECIAL ANALYSIS WILL BE REQUIRED.

THE PIERS AND ABUTMENTS FOR THESE STANDARDS HAVE BEEN DESIGNED FOR THE USE OF BOTH FRICTION AND POINT BEARING PILES. IT IS NECESSARY THAT THE TYPE AND LENGTH FOR BOTH THE ABUTMENT AND PIER PILES BE DESIGNATED ON THE FRONT SHEET OF THE PLANS.

THE INTEGRAL ABUTMENTS AND PILE BENTS FOR THESE J30 STANDARDS HAVE BEEN DESIGNED FOR THE USE OF VARIOUS TYPES OF PILE FOOTINGS AS FOLLOWS.

- INTEGRAL ABUTMENTS: TIMBER PILES OR HP 10x42 PILES AT BRIDGE DESIGN MANUAL(BDM) ARTICLE 6.2.6.1 STRUCTURAL RESISTANCE LEVEL-1 (SRL-1)

- PILE BENTS: STANDARD CONCRETE-FILLED STEEL PIPE PILES (PIOL), STANDARD PRESTRESSED CONCRETE PILES (PIOL), OR STANDARD H-PILES (PIOL AND SRL-1)

BECAUSE THESE BRIDGE STANDARDS HAVE BEEN REVISED FOR LRFD BASED ON 2012-COMPLETED IOWA STATE UNIVERSITY RESEARCH, FOR PILE FOUNDATIONS THE DESIGNER WILL NEED TO DETERMINE THE CONSTRUCTION CONTROL METHOD, CONTRACT LENGTH, AND DRIVING TARGET AND GIVE THAT INFORMATION ON THE FRONT SHEET OF THE PLANS. BRIDGE DESIGN MANUAL CADD NOTES E177, E718, E719, E818, AND E819 ARE APPROPRIATE FOR THAT PURPOSE. THE NOTES, AS WELL AS THE BRIDGE DESIGN MANUAL AND DESIGN EXAMPLES, ARE AVAILABLE ON THE OFFICE OF BRIDGES AND STRUCTURES WEB SITE: HTTP://WWW.IOWADOT.GOV/BRIDGE/INDEX.HTM.

STRUCTURAL RESISTANCE LEVEL-1 (SRL-1) REPLACES THE 50 TON STEEL PILE DESIGNATION.

FOR MORE INFORMATION ON SRL-1, SEE THE BRIDGE DESIGN MANUAL, LOCATED ON THE IOWA DEPARTMENT OF TRANSPORTATION, OFFICE OF BRIDGES AND STRUCTURES WEB SITE.

THESE STANDARDS CAN BE USED FOR BRIDGES WITH OR WITHOUT EPOXY COATED REINFORCING. REINFORCING BAR LAP LENGTHS ARE BASED ON THE USE OF EPOXY COATED REINFORCING, BUT NEED NOT BE MODIFIED IF NON-COATED BARS ARE TO BE USED. THE DESIGNER SHALL SPECIFY THE APPROPRIATE BID ITEM NO. FOR THE EPOXY COATED OR NON-EPOXY COATED REINFORCING.

IT IS RECOMMENDED THAT THE EPOXY COATED REINFORCING OPTION BE USED IF IT IS ANTICIPATED THAT THE BRIDGE DECK AND/OR THE BRIDGE APPROACHES WILL BE CHEMICALLY TREATED FOR THE REMOVAL OF ICE OR SNOW.

IF EPOXY COATED BARS ARE USED IN THE DECK, THEN ALL BARS USED IN THE ABUTMENT (FOOTING AND BACKWALL), CAP, AND BARRIER RAILS SHALL BE EPOXY COATED.

FOR PIERS SUBJECT TO SCOUR THE DESIGN BEARING SHALL BE OBTAINED BELOW SCOUR ELEVATION. SCOUR ELEVATION SHALL BE SHOWN ON THE FRONT SHEET.

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a1 IS $\frac{5}{8}$ INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

SPECIFICATIONS:

DESIGN: AASHTO LRFD, SERIES OF 2004 WITH INTERIM 2005.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2012, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 3rd Ed, SERIES OF 2004.
REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.
CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, f′c = 3,500 PSI,
STRUCTURAL STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 6. ASTM A709 GRADE 36 OR GRADE 50 (AASHTO M270 GRADE 36 OR GRADE 50).
n = 9 FOR TENSION STEEL
2n = 18 FOR COMPRESSION STEEL
HL-93 LIVE LOAD PLUS 20 LBS. PER SQ. FT. FOR FUTURE WEARING SURFACE.
END SPAN LENGTH IS USED TO CALCULATE EQUIVALENT WIDTH IN LIVE LOAD DISTRIBUTION.
SIX FOOT OF APPROACH SLAB DEAD & LIVE LOAD INCLUDED IN ABUTMENT LOADS.
CONTROL OF CRACKING BY DISTRIBUTION OF REINFORCEMENT FOR SLAB DESIGN BASED ON PRE 2005 LRFD INTERMS.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

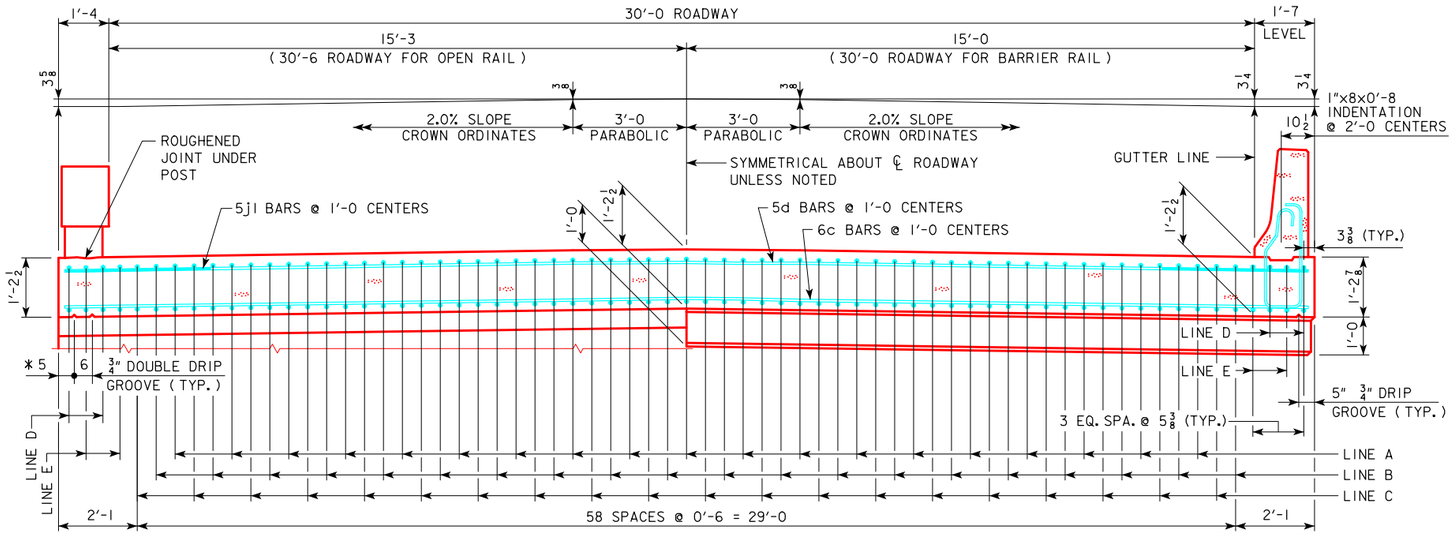
STANDARD DESIGN - 30′ ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

GENERAL NOTES | J30-01A-06

REVISED 06-2013: THIS STANDARD RENAMED TO J30-01A-06. INDEX SHEET INFORMATION ON STANDARD J30-01-06.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.



HALF SECTION NEAR ABUTMENT

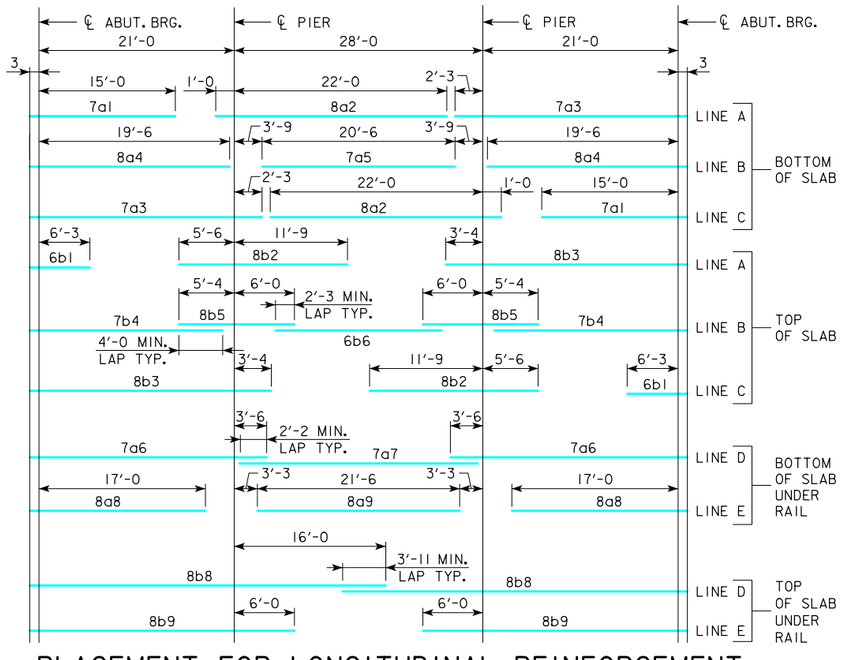
* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 40.08 SQ. FT.

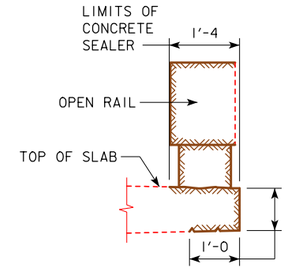
HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 40.13 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



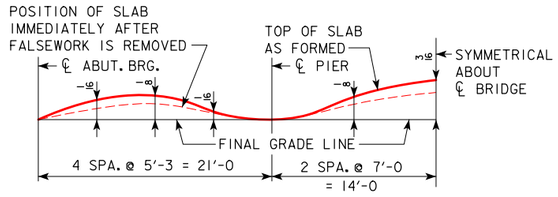
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

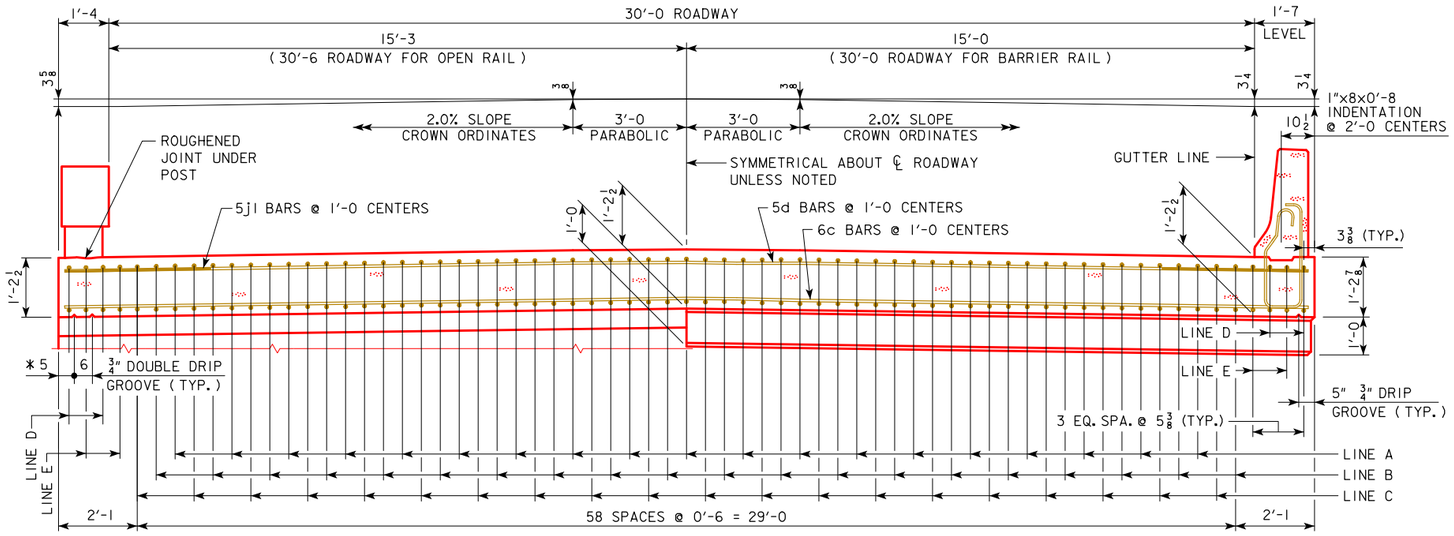
NOVEMBER, 2006

SUPERSTRUCTURE DETAILS
70'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-02B-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.



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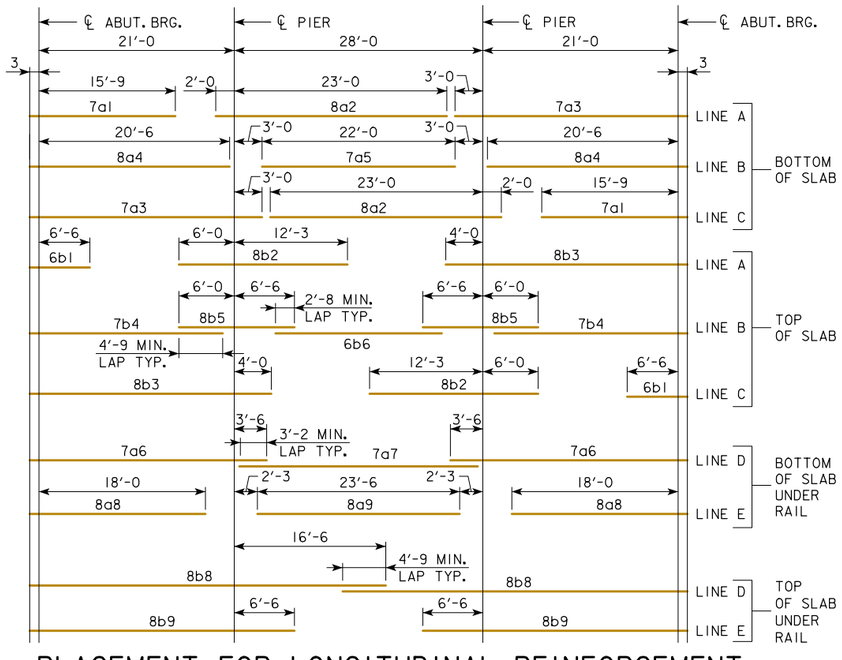

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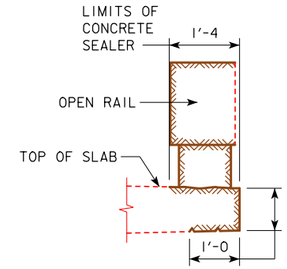

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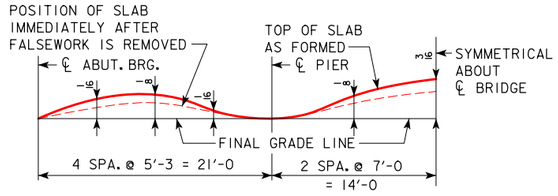

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IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 70'-0 BRIDGE

EPOXY COATED REINFORCING

J30-02E-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 70' BRIDGE

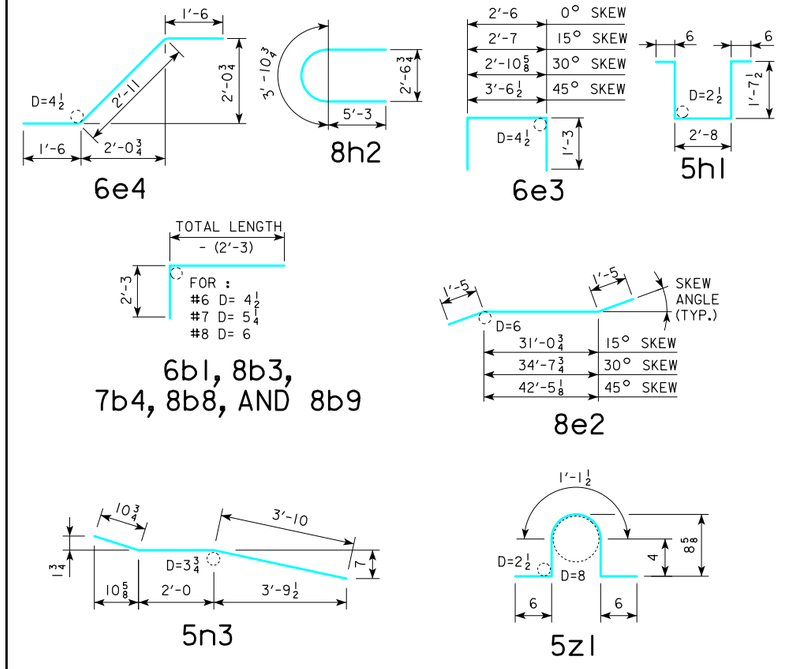
LOCATION \ SKEW	SHAPE	BAR	0° NO.	0° LENGTH	0° WEIGHT	15° NO.	15° LENGTH	15° WEIGHT	30° NO.	30° LENGTH	30° WEIGHT	45° NO.	45° LENGTH	45° WEIGHT
SLAB LONGITUDINAL BOTTOM		7a1	39	15'-3	1216	39	15'-3	1216	39	15'-3	1216	39	15'-3	1216
SLAB LONGITUDINAL BOTTOM		8a2	39	23'-0	2395	39	23'-0	2395	39	23'-0	2395	39	23'-0	2395
SLAB LONGITUDINAL BOTTOM		7a3	39	23'-6	1874	39	23'-6	1874	39	23'-6	1874	39	23'-6	1874
SLAB LONGITUDINAL BOTTOM		8a4	40	19'-9	2110	40	19'-9	2110	40	19'-9	2110	40	19'-9	2110
SLAB LONGITUDINAL BOTTOM		7a5	20	20'-6	839	20	20'-6	839	20	20'-6	839	20	20'-6	839
SLAB LONGITUDINAL BOTTOM, AT RAIL		7a6	8	24'-9	405	8	24'-9	405	8	24'-9	405	8	24'-9	405
SLAB LONGITUDINAL BOTTOM, AT RAIL		7a7	4	25'-4	208	4	25'-4	208	4	25'-4	208	4	25'-4	208
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a8	8	17'-3	369	8	17'-3	369	8	17'-3	369	8	17'-3	369
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	4	21'-6	230	4	21'-6	230	4	21'-6	230	4	21'-6	230
SLAB LONGITUDINAL TOP		6b1	39	8'-9	513	39	8'-9	513	39	8'-9	513	39	8'-9	513
SLAB LONGITUDINAL TOP		8b2	39	17'-3	1797	39	17'-3	1797	39	17'-3	1797	39	17'-3	1797
SLAB LONGITUDINAL TOP		8b3	39	26'-10	2795	39	26'-10	2795	39	26'-10	2795	39	26'-10	2795
SLAB LONGITUDINAL TOP		7b4	40	22'-2	1813	40	22'-2	1813	40	22'-2	1813	40	22'-2	1813
SLAB LONGITUDINAL TOP		8b5	40	11'-4	1211	40	11'-4	1211	40	11'-4	1211	40	11'-4	1211
SLAB LONGITUDINAL TOP		6b6	20	20'-6	616	20	20'-6	616	20	20'-6	616	20	20'-6	616
SLAB LONGITUDINAL TOP, AT RAIL		8b8	8	39'-6	844	8	39'-6	844	8	39'-6	844	8	39'-6	844
SLAB LONGITUDINAL TOP, AT RAIL		8b9	8	29'-6	631	8	29'-6	631	8	29'-6	631	8	29'-6	631
SLAB TRANSVERSE, BOTTOM		6c1	67	32'-10	3305	67	34'-0	3422	54	32'-10	2664	40	32'-10	1973
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	67	32'-10	2295	67	34'-0	2376	54	32'-10	1850	40	32'-10	1370
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	48	6'-11	347	48	6'-11	347	60	6'-11	433	72	6'-11	520
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	132	8'-6	1171	132	8'-6	1171	132	8'-6	1171	130	8'-6	1153
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					31,437			31,733			32,209			32,980
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					4957			4957			4957			4957
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					5100			5100			5100			5100
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			36,394			36,690			37,166			37,937
		WITH OPEN RAIL			36,537			36,833			37,309			38,080
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			34,904			35,164			35,438			35,865
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			35,047			35,307			35,581			36,008

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 70' 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.	131.2	132.0	134.9	141.0	126.6	127.3	129.6	134.6
	REINFORCING STEEL	LBS.	36,394	36,690	37,166	37,937	34,904	35,164	35,438	35,865
CONCRETE BARRIER OR OPEN RAIL		LIN. FT.	162.0	162.2	162.9	164.5	162.0	162.2	162.9	164.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE)	C.Y.	131.1	131.9	134.8	140.8	126.5	127.1	129.5	134.5
	REINFORCING STEEL	LBS.	36,537	36,833	37,309	38,080	35,047	35,307	35,581	36,008

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 70'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-03B-06

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 70' 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		7a1	39	16'-0	1276	39	16'-0	1276	39	16'-0	1276	39	16'-0	1276
SLAB LONGITUDINAL BOTTOM		8a2	39	25'-0	2604	39	25'-0	2604	39	25'-0	2604	39	25'-0	2604
SLAB LONGITUDINAL BOTTOM		7a3	39	24'-3	1934	39	24'-3	1934	39	24'-3	1934	39	24'-3	1934
SLAB LONGITUDINAL BOTTOM		8a4	40	20'-9	2217	40	20'-9	2217	40	20'-9	2217	40	20'-9	2217
SLAB LONGITUDINAL BOTTOM, AT RAIL		7a5	20	22'-0	900	20	22'-0	900	20	22'-0	900	20	22'-0	900
SLAB LONGITUDINAL BOTTOM, AT RAIL		7a6	8	24'-9	405	8	24'-9	405	8	24'-9	405	8	24'-9	405
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	18'-3	390	8	18'-3	390	8	18'-3	390	8	18'-3	390
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	9'-0	528	39	9'-0	528	39	9'-0	528	39	9'-0	528
SLAB LONGITUDINAL TOP		8b2	39	18'-3	1901	39	18'-3	1901	39	18'-3	1901	39	18'-3	1901
SLAB LONGITUDINAL TOP		8b3	39	27'-6	2864	39	27'-6	2864	39	27'-6	2864	39	27'-6	2864
SLAB LONGITUDINAL TOP		7b4	40	22'-3	1820	40	22'-3	1820	40	22'-3	1820	40	22'-3	1820
SLAB LONGITUDINAL TOP		8b5	40	12'-6	1335	40	12'-6	1335	40	12'-6	1335	40	12'-6	1335
SLAB LONGITUDINAL TOP		6b6	20	20'-4	611	20	20'-4	611	20	20'-4	611	20	20'-4	611
SLAB LONGITUDINAL TOP, AT RAIL		8b8	8	40'-0	855	8	40'-0	855	8	40'-0	855	8	40'-0	855
SLAB LONGITUDINAL TOP, AT RAIL		8b9	8	30'-0	641	8	30'-0	641	8	30'-0	641	8	30'-0	641
SLAB TRANSVERSE, BOTTOM		6c1	67	32'-10	3305	67	34'-0	3422	54	32'-10	2664	40	32'-10	1973
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	67	32'-10	2295	67	34'-0	2376	54	32'-10	1850	40	32'-10	1370
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	48	6'-11	347	48	6'-11	347	60	6'-11	433	72	6'-11	520
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	132	8'-6	1171	132	8'-6	1171	132	8'-6	1171	130	8'-6	1153
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
** PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					32,327			32,623			33,099			33,870
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					4957			4957			4957			4957
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					5100			5100			5100			5100
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			37,284			37,580			38,056			38,827
		WITH OPEN RAIL			37,427			37,723			38,199			38,970
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			35,794			36,054			36,328			36,755
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			35,937			36,197			36,471			36,898

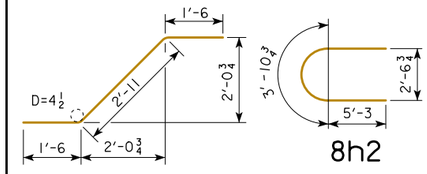
** BARS MAY BE NON-COATED AT CONTRACTOR'S OPTION.

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 70' 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.	131.2	132.0	134.9	141.0	126.6	127.3	129.6	134.6
	REINFORCING STEEL EPOXY COATED	LBS.	37,284	37,580	38,056	38,827	35,794	36,054	36,328	36,755
CONCRETE BARRIER OR OPEN RAIL		LIN. FT.	162.0	162.2	162.9	164.5	162.0	162.2	162.9	164.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE)	C.Y.	131.1	131.9	134.8	140.8	125.5	127.1	129.5	134.5
	REINFORCING STEEL EPOXY COATED	LBS.	37,427	37,723	38,199	38,970	35,937	36,197	36,471	36,898

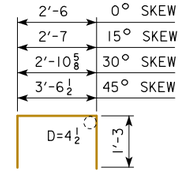
* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS

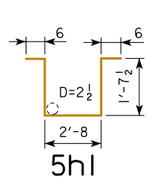


6e4

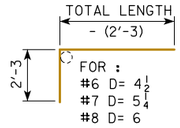
8h2



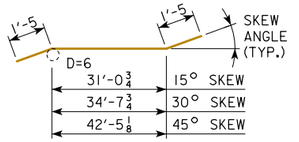
6e3



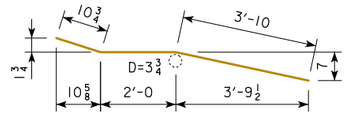
5h1



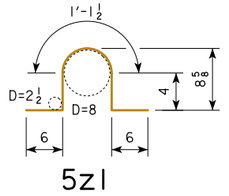
6b1, 8b3,
7b4, 8b8, AND 8b9



8e2



5n3



5z1

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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

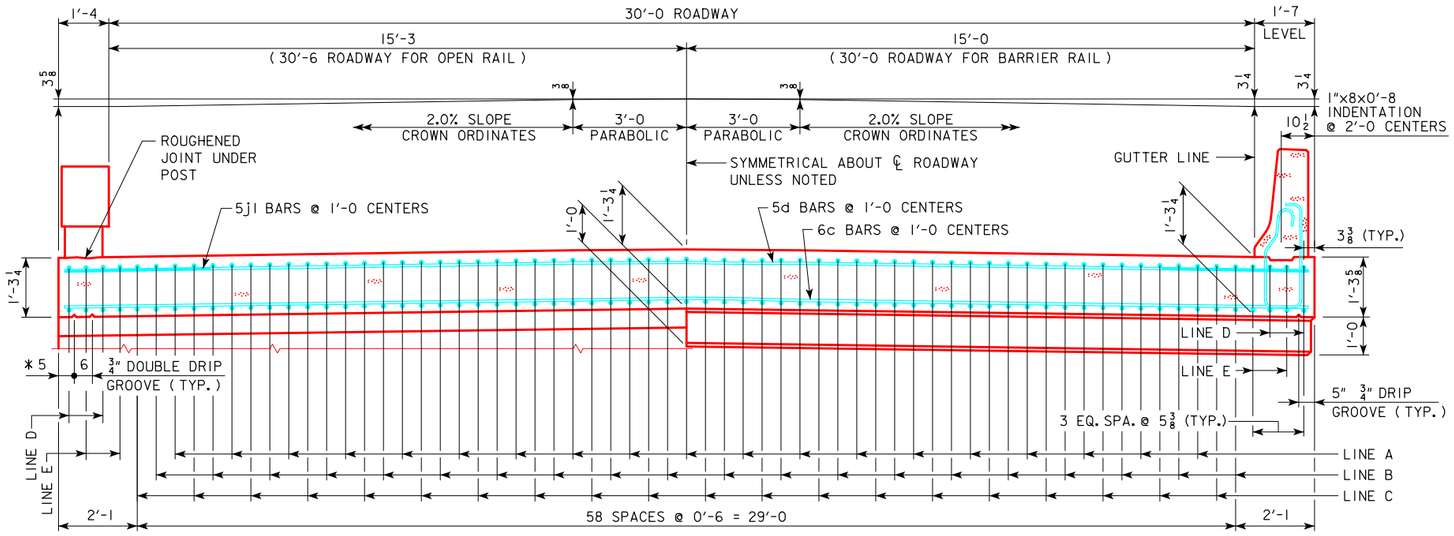
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS
70'-0 BRIDGE

EPOXY COATED REINFORCING

J30-03E-06



HALF SECTION NEAR ABUTMENT

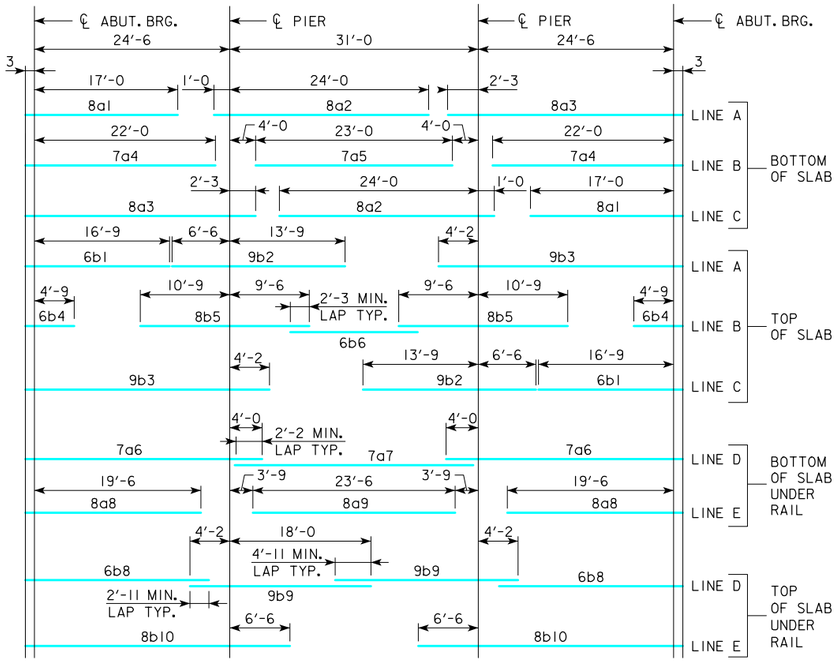
* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 42.15 SQ. FT.

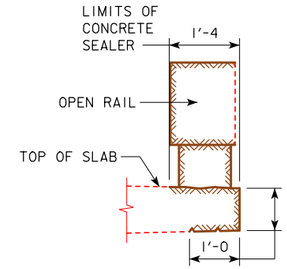
HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 42.20 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED.
I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



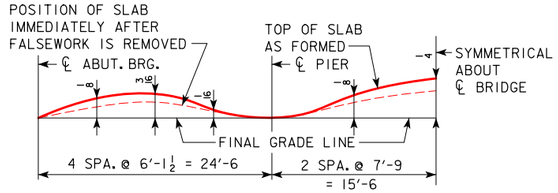
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

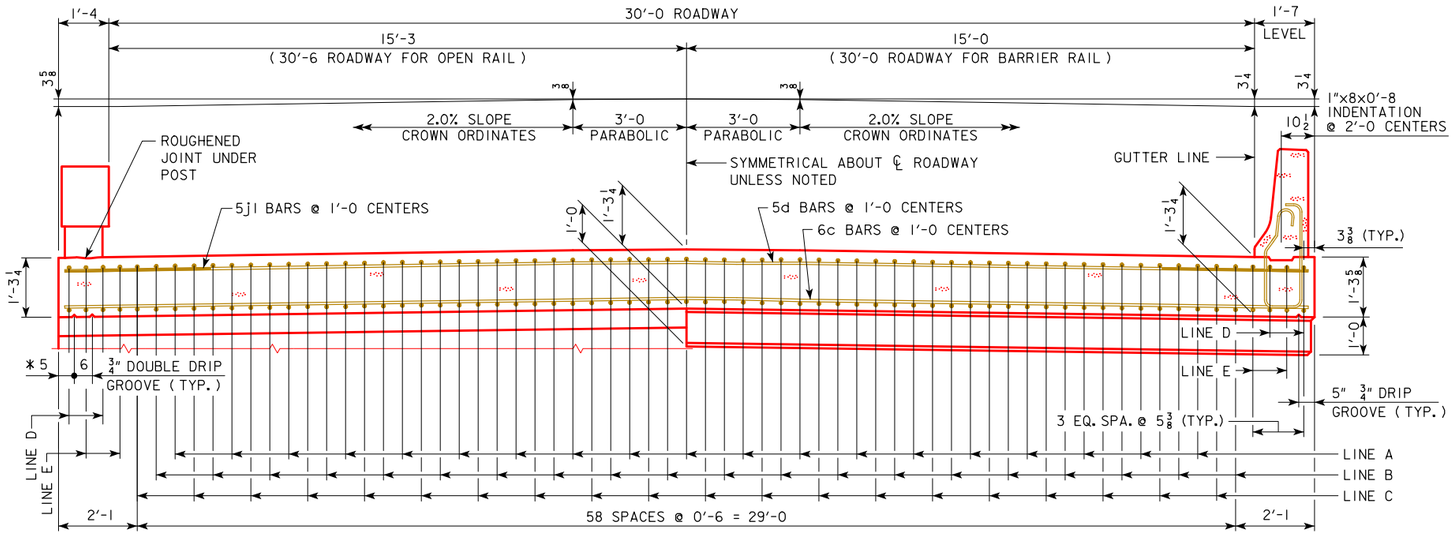
NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 80'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-04B-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.



HALF SECTION NEAR ABUTMENT

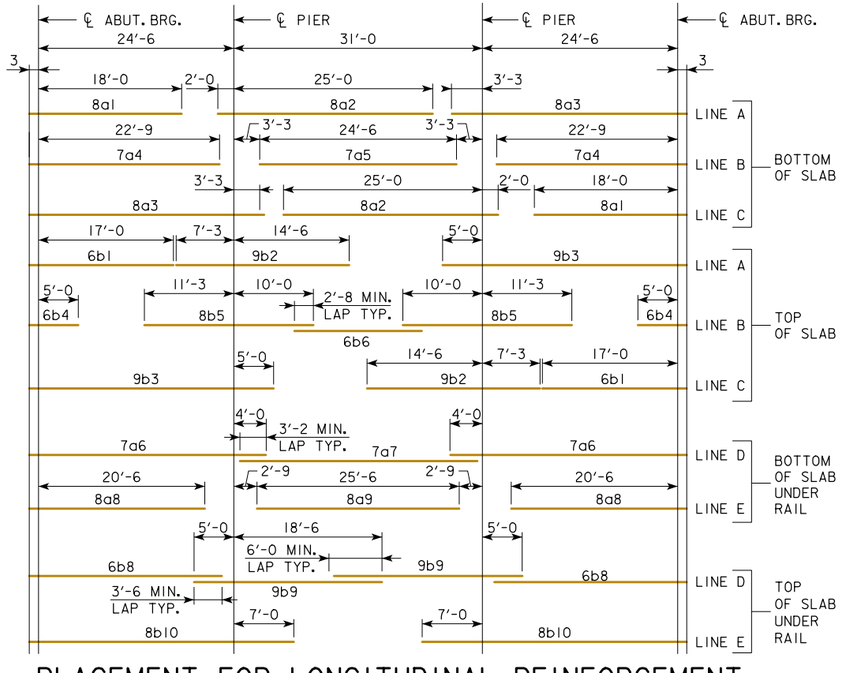
* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 42.15 SQ. FT.

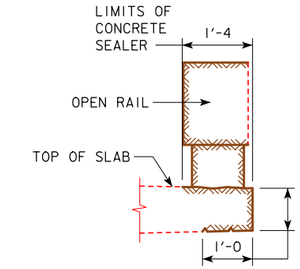
HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 42.20 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED.
I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



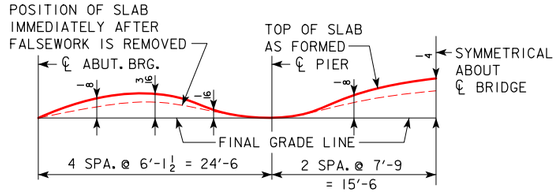
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS
80'-0 BRIDGE

EPOXY COATED REINFORCING

J30-04E-06

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 80' BRIDGE

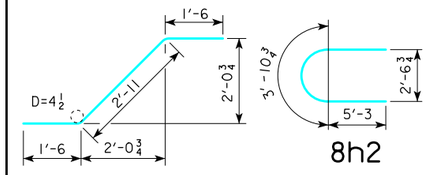
LOCATION \ SKEW	SHAPE	BAR	0° NO.	0° LENGTH	0° WEIGHT	15° NO.	15° LENGTH	15° WEIGHT	30° NO.	30° LENGTH	30° WEIGHT	45° NO.	45° LENGTH	45° WEIGHT
SLAB LONGITUDINAL BOTTOM		8a1	39	17'-3	1797	39	17'-3	1797	39	17'-3	1797	39	17'-3	1797
SLAB LONGITUDINAL BOTTOM		8a2	39	25'-0	2604	39	25'-0	2604	39	25'-0	2604	39	25'-0	2604
SLAB LONGITUDINAL BOTTOM		8a3	39	27'-0	2812	39	27'-0	2812	39	27'-0	2812	39	27'-0	2812
SLAB LONGITUDINAL BOTTOM		7a4	40	22'-3	1820	40	22'-3	1820	40	22'-3	1820	40	22'-3	1820
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	28'-9	471	8	28'-9	471	8	28'-9	471	8	28'-9	471
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	19'-9	422	8	19'-9	422	8	19'-9	422	8	19'-9	422
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	19'-3	1128	39	19'-3	1128	39	19'-3	1128	39	19'-3	1128
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	31'-2	4133	39	31'-2	4133	39	31'-2	4133	39	31'-2	4133
SLAB LONGITUDINAL TOP		6b4	40	7'-3	436	40	7'-3	436	40	7'-3	436	40	7'-3	436
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	25'-9	310	8	25'-9	310	8	25'-9	310	8	25'-9	310
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	33'-6	716	8	33'-6	716	8	33'-6	716	8	33'-6	716
SLAB TRANSVERSE, BOTTOM		6c1	77	32'-10	3798	77	34'-0	3933	64	32'-10	3157	50	32'-10	2466
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	77	32'-10	2637	77	34'-0	2731	64	32'-10	2192	50	32'-10	1713
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	48	7'-1	355	48	7'-1	355	60	7'-1	444	72	7'-1	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	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					36,604			36,931			37,379			38,152
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					5464			5464			5464			5464
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					5799			5799			5799			5799
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			42,068			42,395			42,843			43,616
		WITH OPEN RAIL			42,403			42,730			43,178			43,951
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			40,570			40,861			41,104			41,532
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			40,905			41,196			41,439			41,867

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.	152.0	152.8	155.6	161.6	147.4.	148.0	150.4	155.3
	REINFORCING STEEL	LBS.	42,068	42,395	42,843	43,616	40,570	40,861	41,104	41,532
	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.	151.8	152.6	155.5	161.5	147.2	147.9	150.2	155.1
	REINFORCING STEEL	LBS.	42,403	42,730	43,178	43,951	40,905	41,196	41,439	41,867

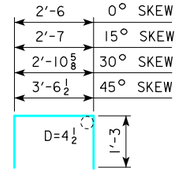
* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS

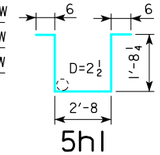


6e4

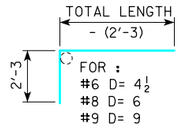
8h2



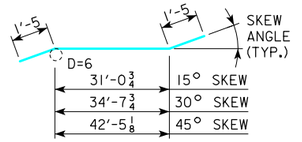
6e3



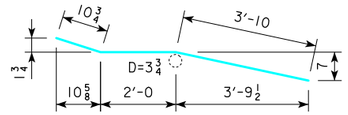
5h1



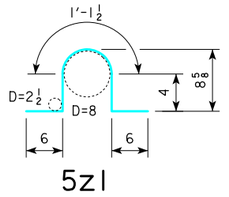
6b1, 9b3,
6b4, 6b8, AND 8b10



8e2



5n3



5z1

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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT 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

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'-3	1901	39	18'-3	1901	39	18'-3	1901	39	18'-3	1901
SLAB LONGITUDINAL BOTTOM		8a2	39	27'-0	2812	39	27'-0	2812	39	27'-0	2812	39	27'-0	2812
SLAB LONGITUDINAL BOTTOM		8a3	39	28'-0	2916	39	28'-0	2916	39	28'-0	2916	39	28'-0	2916
SLAB LONGITUDINAL BOTTOM		7a4	40	23'-0	1881	40	23'-0	1881	40	23'-0	1881	40	23'-0	1881
SLAB LONGITUDINAL BOTTOM		7a5	20	24'-6	1002	20	24'-6	1002	20	24'-6	1002	20	24'-6	1002
SLAB LONGITUDINAL BOTTOM, AT RAIL		7a6	8	28'-9	471	8	28'-9	471	8	28'-9	471	8	28'-9	471
SLAB LONGITUDINAL BOTTOM, AT RAIL		7a7	4	29'-4	240	4	29'-4	240	4	29'-4	240	4	29'-4	240
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a8	8	20'-9	444	8	20'-9	444	8	20'-9	444	8	20'-9	444
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	4	25'-6	273	4	25'-6	273	4	25'-6	273	4	25'-6	273
SLAB LONGITUDINAL TOP		6b1	39	19'-6	1143	39	19'-6	1143	39	19'-6	1143	39	19'-6	1143
SLAB LONGITUDINAL TOP		9b2	39	21'-9	2885	39	21'-9	2885	39	21'-9	2885	39	21'-9	2885
SLAB LONGITUDINAL TOP		9b3	39	32'-0	4244	39	32'-0	4244	39	32'-0	4244	39	32'-0	4244
SLAB LONGITUDINAL TOP		6b4	40	7'-6	451	40	7'-6	451	40	7'-6	451	40	7'-6	451
SLAB LONGITUDINAL TOP		8b5	40	21'-3	2270	40	21'-3	2270	40	21'-3	2270	40	21'-3	2270
SLAB LONGITUDINAL TOP		6b6	20	16'-4	491	20	16'-4	491	20	16'-4	491	20	16'-4	491
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	25'-6	307	8	25'-6	307	8	25'-6	307	8	25'-6	307
SLAB LONGITUDINAL TOP, AT RAIL		9b9	8	23'-6	640	8	23'-6	640	8	23'-6	640	8	23'-6	640
SLAB LONGITUDINAL TOP, AT RAIL		8b10	8	34'-0	727	8	34'-0	727	8	34'-0	727	8	34'-0	727
SLAB TRANSVERSE, BOTTOM		6c1	77	32'-10	3798	77	34'-0	3933	64	32'-10	3157	50	32'-10	2466
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	77	32'-10	2637	77	34'-0	2731	64	32'-10	2192	50	32'-10	1713
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	48	7'-1	355	48	7'-1	355	60	7'-1	444	72	7'-1	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	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
** PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					37,689			38,016			38,464			39,237
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					5464			5464			5464			5464
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					5799			5799			5799			5799
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			43,153			43,480			43,928			44,701
		WITH OPEN RAIL			43,488			43,815			44,263			45,036
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			41,655			41,946			42,189			42,617
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			41,990			42,281			42,524			42,952

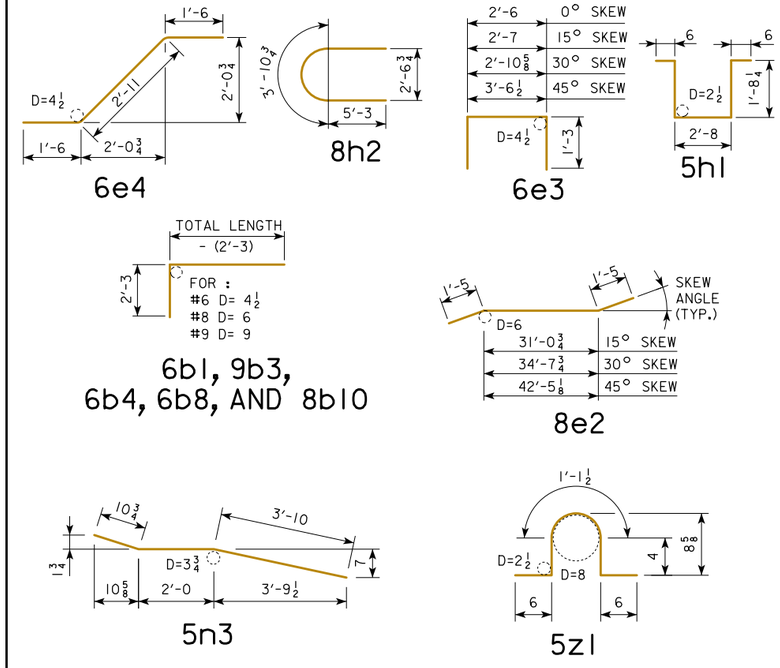
** BARS MAY BE NON-COATED AT CONTRACTOR'S OPTION.

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.	152.0	152.8	155.6	161.6	147.4	148.0	150.4	155.3
	REINFORCING STEEL EPOXY COATED LBS.	43,153	43,480	43,928	44,701	41,655	41,946	42,189	42,617
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.	151.8	152.6	155.5	161.5	147.2	147.8	150.2	155.1
	REINFORCING STEEL EPOXY COATED LBS.	43,488	43,815	44,263	45,036	41,990	42,281	42,524	42,952

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

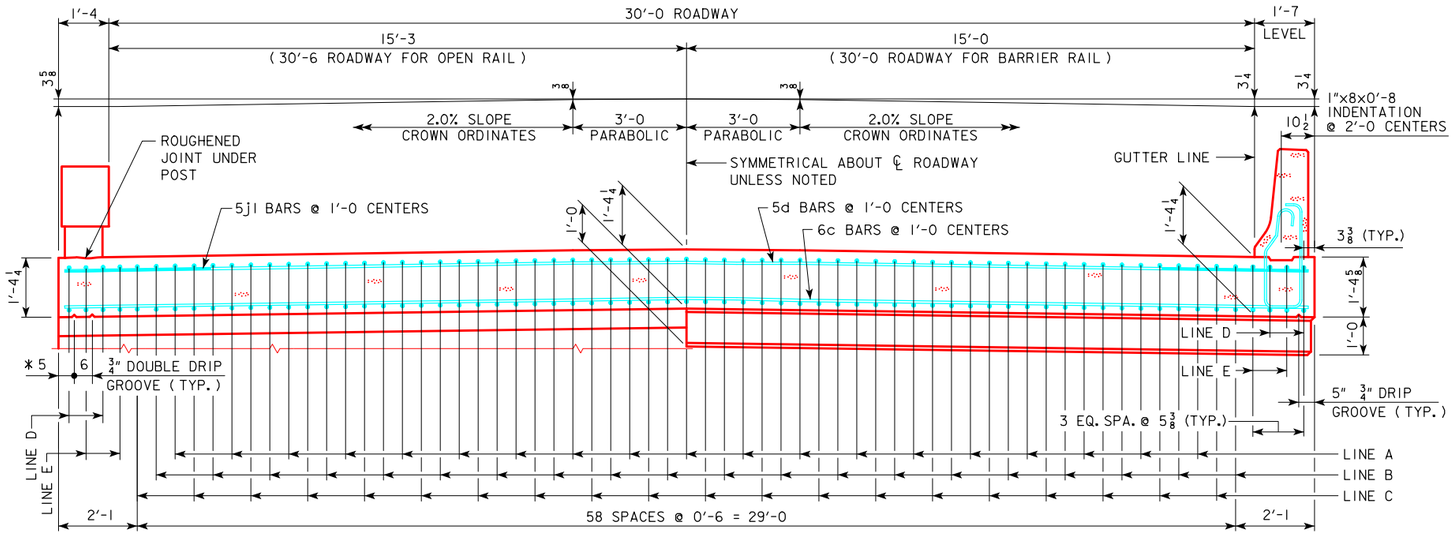
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS
80'-0 BRIDGE

EPOXY COATED REINFORCING

J30-05E-06



HALF SECTION NEAR ABUTMENT

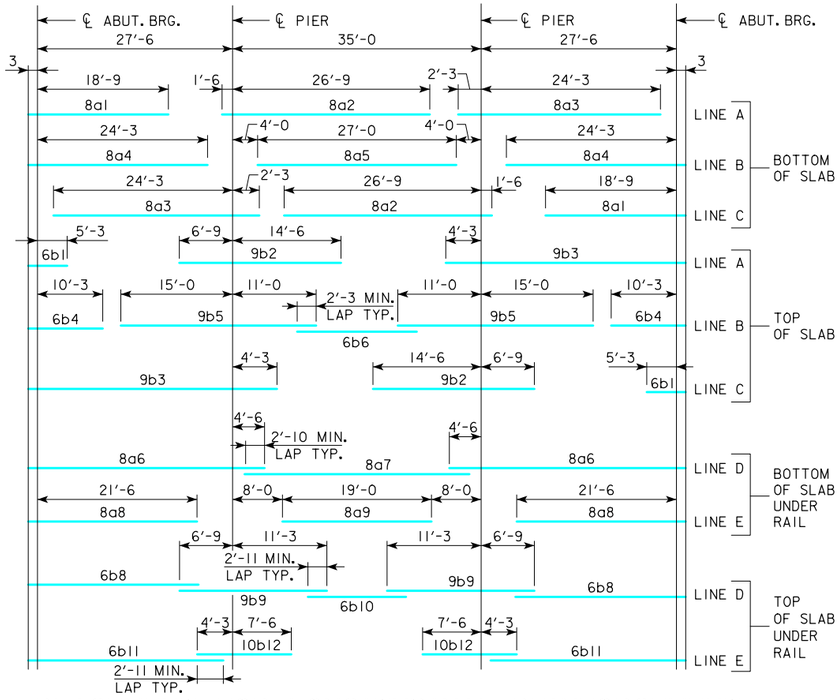
* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 44.92 SQ. FT.

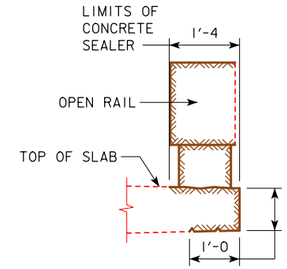
HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 44.97 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



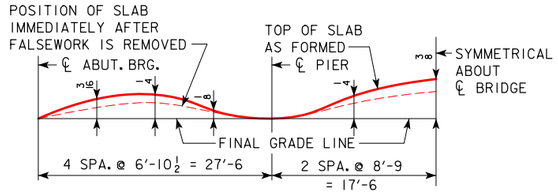
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020 LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

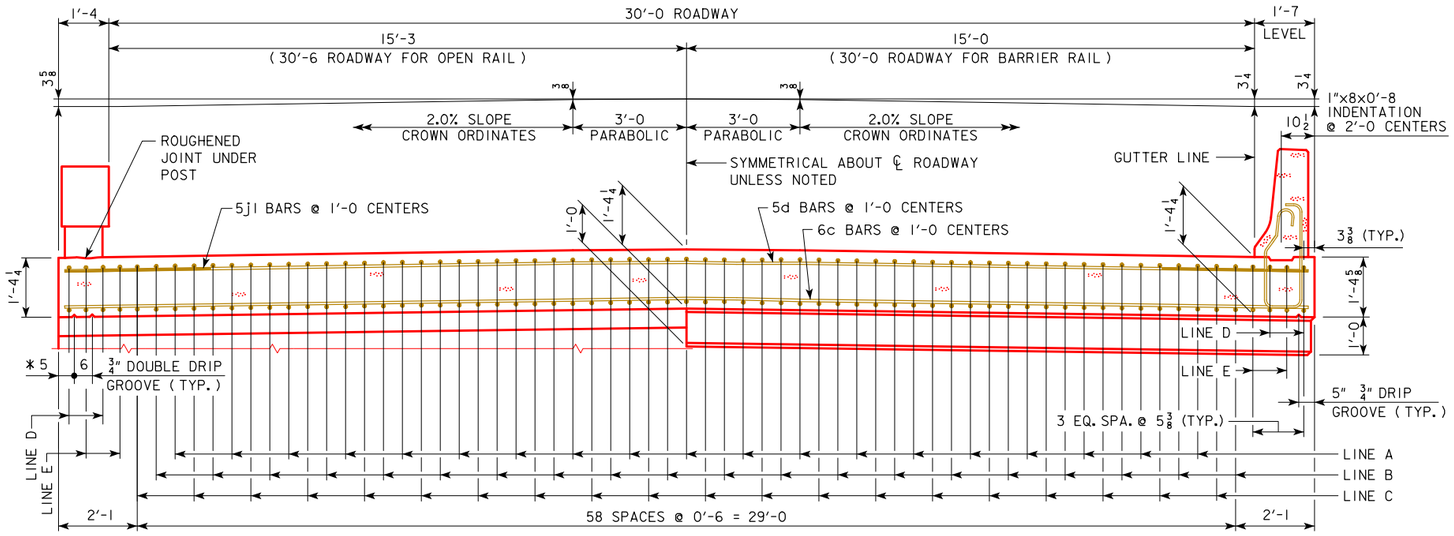
NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 90'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-06B-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.



HALF SECTION NEAR ABUTMENT

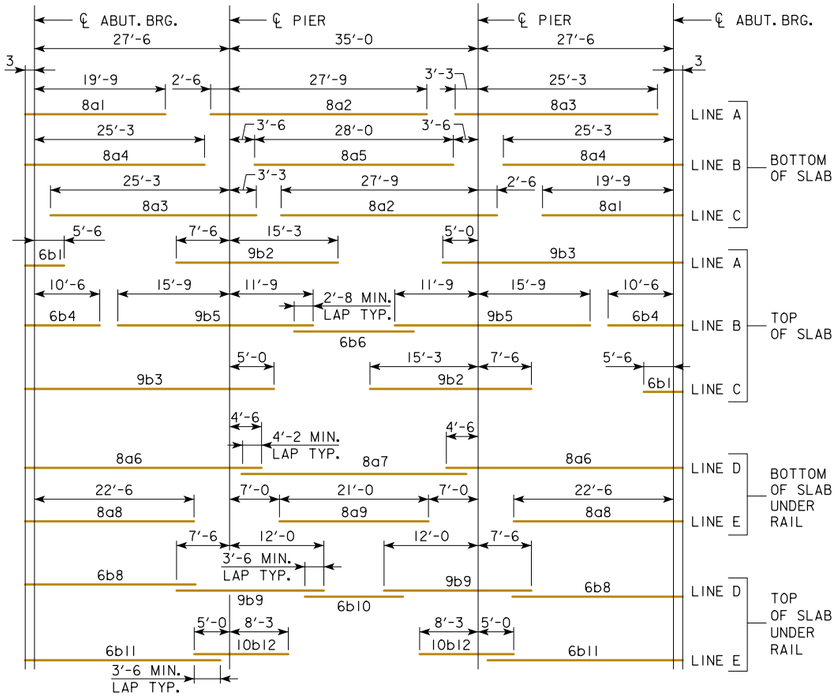
HALF SECTION NEAR PIER

* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

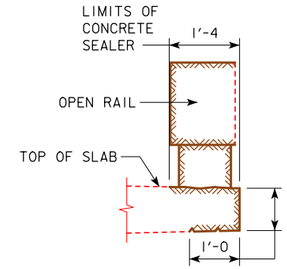
SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 44.92 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 44.97 SQ. FT.



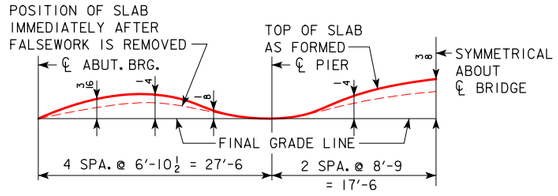
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 90'-0 BRIDGE

EPOXY COATED REINFORCING

J30-06E-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 90' BRIDGE

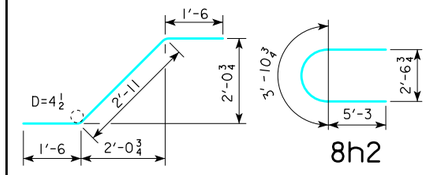
LOCATION \ SKEW	SHAPE	BAR	0° NO.	0° LENGTH	0° WEIGHT	15° NO.	15° LENGTH	15° WEIGHT	30° NO.	30° LENGTH	30° WEIGHT	45° NO.	45° LENGTH	45° WEIGHT
SLAB LONGITUDINAL BOTTOM		8a1	39	19'-0	1979	39	19'-0	1979	39	19'-0	1979	39	19'-0	1979
SLAB LONGITUDINAL BOTTOM		8a2	39	28'-3	2942	39	28'-3	2942	39	28'-3	2942	39	28'-3	2942
SLAB LONGITUDINAL BOTTOM		8a3	39	26'-6	2760	39	26'-6	2760	39	26'-6	2760	39	26'-6	2760
SLAB LONGITUDINAL BOTTOM		8a4	40	24'-6	2617	40	24'-6	2617	40	24'-6	2617	40	24'-6	2617
SLAB LONGITUDINAL BOTTOM		8a5	20	27'-0	1442	20	27'-0	1442	20	27'-0	1442	20	27'-0	1442
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a6	8	32'-3	689	8	32'-3	689	8	32'-3	689	8	32'-3	689
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a7	4	31'-8	339	4	31'-8	339	4	31'-8	339	4	31'-8	339
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a8	8	21'-9	465	8	21'-9	465	8	21'-9	465	8	21'-9	465
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	4	19'-0	203	4	19'-0	203	4	19'-0	203	4	19'-0	203
SLAB LONGITUDINAL TOP		6b1	39	7'-9	454	39	7'-9	454	39	7'-9	454	39	7'-9	454
SLAB LONGITUDINAL TOP		9b2	39	21'-3	2818	39	21'-3	2818	39	21'-3	2818	39	21'-3	2818
SLAB LONGITUDINAL TOP		9b3	39	34'-3	4542	39	34'-3	4542	39	34'-3	4542	39	34'-3	4542
SLAB LONGITUDINAL TOP		6b4	40	12'-9	767	40	12'-9	767	40	12'-9	767	40	12'-9	767
SLAB LONGITUDINAL TOP		9b5	40	26'-0	3536	40	26'-0	3536	40	26'-0	3536	40	26'-0	3536
SLAB LONGITUDINAL TOP		6b6	20	17'-6	526	20	17'-6	526	20	17'-6	526	20	17'-6	526
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	26'-2	315	8	26'-2	315	8	26'-2	315	8	26'-2	315
SLAB LONGITUDINAL TOP, AT RAIL		9b9	8	18'-0	490	8	18'-0	490	8	18'-0	490	8	18'-0	490
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	18'-4	111	4	18'-4	111	4	18'-4	111	4	18'-4	111
SLAB LONGITUDINAL TOP, AT RAIL		6b11	8	28'-8	345	8	28'-8	345	8	28'-8	345	8	28'-8	345
SLAB LONGITUDINAL TOP, AT RAIL		10b12	8	11'-9	405	8	11'-9	405	8	11'-9	405	8	11'-9	405
SLAB TRANSVERSE, BOTTOM		6c1	87	32'-10	4291	87	34'-0	4443	74	32'-10	3650	60	32'-10	2959
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	87	32'-10	2980	87	34'-0	3086	74	32'-10	2535	60	32'-10	2055
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	56	7'-3	424	56	7'-3	424	56	7'-3	424	70	7'-3	530
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	172	8'-6	1525	172	8'-6	1525	172	8'-6	1525	170	8'-6	1508
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					41,418			41,774			42,104			42,895
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					5950			5950			5950			5950
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					6330			6330			6330			6330
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			47,368			47,724			48,054			48,845
		WITH OPEN RAIL			47,748			48,104			48,434			49,225
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			45,801			46,121			46,335			46,763
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			46,181			46,501			46,715			47,143

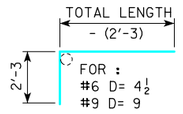
ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 90' BRIDGE

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.	176.5	177.3	180.1	186.1	171.9	172.5	174.9	179.7
	REINFORCING STEEL LBS.	47,368	47,724	48,054	48,845	45,801	46,121	46,335	46,763
CONCRETE BARRIER OR OPEN RAIL	LIN. FT.	202.0	202.2	202.9	204.5	202.0	202.2	202.9	204.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE) C.Y.	176.3	177.1	180.0	185.9	171.7	172.4	174.7	179.5
	REINFORCING STEEL LBS.	47,748	48,104	48,434	49,225	46,181	46,501	46,715	47,143

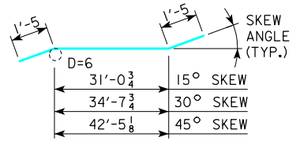
* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS





6b1, 9b3,
6b4, 6b8, AND 6b11



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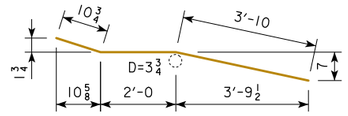
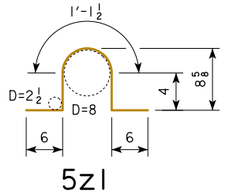


5n3



5z1

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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 90'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-07B-06

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 90' BRIDGE

LOCATION \ SKEW	SHAPE	0° 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	20'-0	2083	39	20'-0	2083	39	20'-0	2083	39	20'-0	2083
SLAB LONGITUDINAL BOTTOM		8a2	39	30'-3	3150	39	30'-3	3150	39	30'-3	3150	39	30'-3	3150
SLAB LONGITUDINAL BOTTOM		8a3	39	28'-6	2968	39	28'-6	2968	39	28'-6	2968	39	28'-6	2968
SLAB LONGITUDINAL BOTTOM		8a4	40	25'-6	2724	40	25'-6	2724	40	25'-6	2724	40	25'-6	2724
SLAB LONGITUDINAL BOTTOM		8a5	20	28'-0	1496	20	28'-0	1496	20	28'-0	1496	20	28'-0	1496
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a6	8	32'-3	689	8	32'-3	689	8	32'-3	689	8	32'-3	689
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a7	4	34'-4	367	4	34'-4	367	4	34'-4	367	4	34'-4	367
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a8	8	22'-9	486	8	22'-9	486	8	22'-9	486	8	22'-9	486
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	4	21'-0	225	4	21'-0	225	4	21'-0	225	4	21'-0	225
SLAB LONGITUDINAL TOP		6b1	39	8'-0	469	39	8'-0	469	39	8'-0	469	39	8'-0	469
SLAB LONGITUDINAL TOP		9b2	39	22'-9	3017	39	22'-9	3017	39	22'-9	3017	39	22'-9	3017
SLAB LONGITUDINAL TOP		9b3	39	35'-0	4641	39	35'-0	4641	39	35'-0	4641	39	35'-0	4641
SLAB LONGITUDINAL TOP		6b4	40	13'-0	782	40	13'-0	782	40	13'-0	782	40	13'-0	782
SLAB LONGITUDINAL TOP		9b5	40	27'-6	3740	40	27'-6	3740	40	27'-6	3740	40	27'-6	3740
SLAB LONGITUDINAL TOP		6b6	20	16'-10	506	20	16'-10	506	20	16'-10	506	20	16'-10	506
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	26'-0	313	8	26'-0	313	8	26'-0	313	8	26'-0	313
SLAB LONGITUDINAL TOP, AT RAIL		9b9	8	19'-6	531	8	19'-6	531	8	19'-6	531	8	19'-6	531
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	18'-0	109	4	18'-0	109	4	18'-0	109	4	18'-0	109
SLAB LONGITUDINAL TOP, AT RAIL		6b11	8	28'-6	343	8	28'-6	343	8	28'-6	343	8	28'-6	343
SLAB LONGITUDINAL TOP, AT RAIL		10b12	8	13'-3	457	8	13'-3	457	8	13'-3	457	8	13'-3	457
SLAB TRANSVERSE, BOTTOM		6c1	87	32'-10	4291	87	34'-0	4443	74	32'-10	3650	60	32'-10	2959
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	87	32'-10	2980	87	34'-0	3086	74	32'-10	2535	60	32'-10	2055
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	56	7'-3	424	56	7'-3	424	56	7'-3	424	70	7'-3	530
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	172	8'-6	1525	172	8'-6	1525	172	8'-6	1525	170	8'-6	1508
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
** PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					42,769			43,125			43,455			44,246
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					5950			5950			5950			5950
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					6330			6330			6330			6330
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			48,719			49,075			49,405			50,196
		WITH OPEN RAIL			49,099			49,455			49,785			50,576
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			47,152			47,472			47,686			48,114
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			47,532			47,852			48,066			48,494

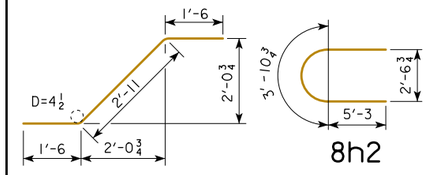
** BARS MAY BE NON-COATED AT CONTRACTOR'S OPTION.

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 90' 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.	176.5	177.3	180.1	186.1	171.9	172.5	174.9	179.7
	REINFORCING STEEL EPOXY COATED LBS.	48,719	49,075	49,405	50,196	47,152	47,472	47,686	48,114
CONCRETE BARRIER OR OPEN RAIL	LIN. FT.	202.0	202.2	202.9	204.5	202.0	202.2	202.9	204.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE) C.Y.	176.3	177.1	180.0	185.9	171.7	172.4	174.7	179.5
	REINFORCING STEEL EPOXY COATED LBS.	49,099	49,455	49,785	50,576	47,532	47,852	48,066	48,494

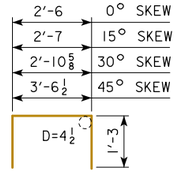
* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



6e4

8h2



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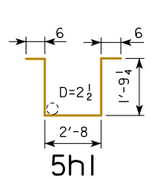

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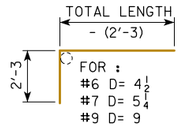
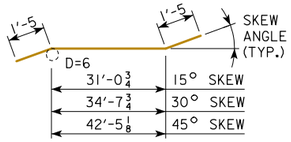


6b1, 9b3,
6b4, 6b8, AND 6b11



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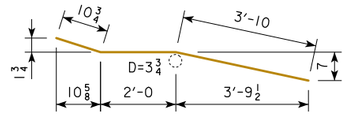

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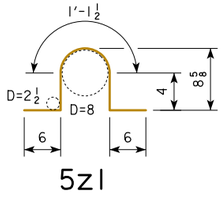


5z1

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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

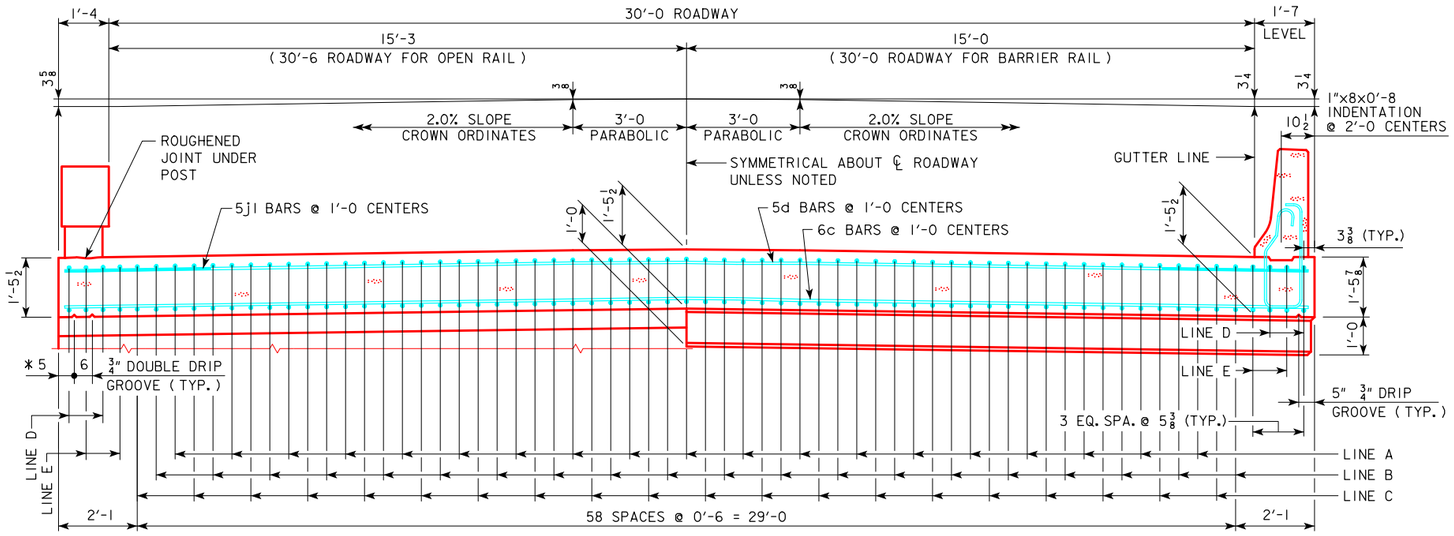
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 90'-0 BRIDGE

EPOXY COATED REINFORCING

J30-07E-06



HALF SECTION NEAR ABUTMENT

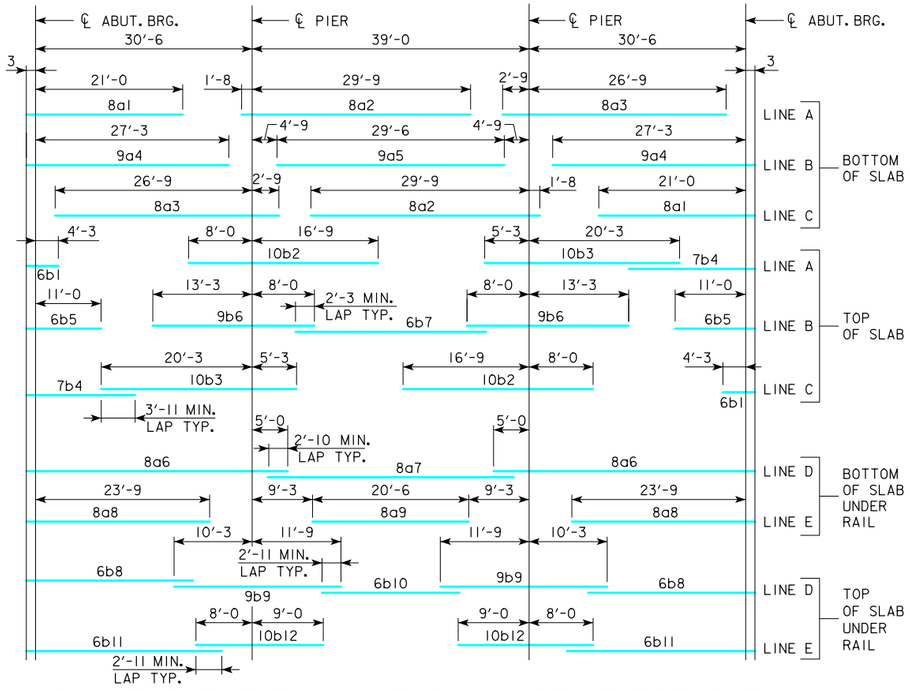
* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 48.37 SQ. FT.

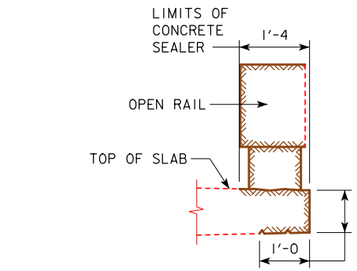
HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 48.42 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED.
I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



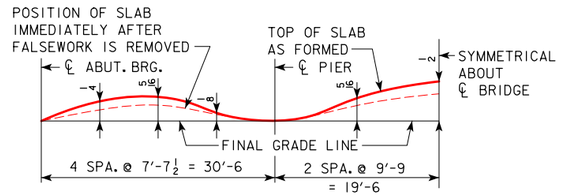
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

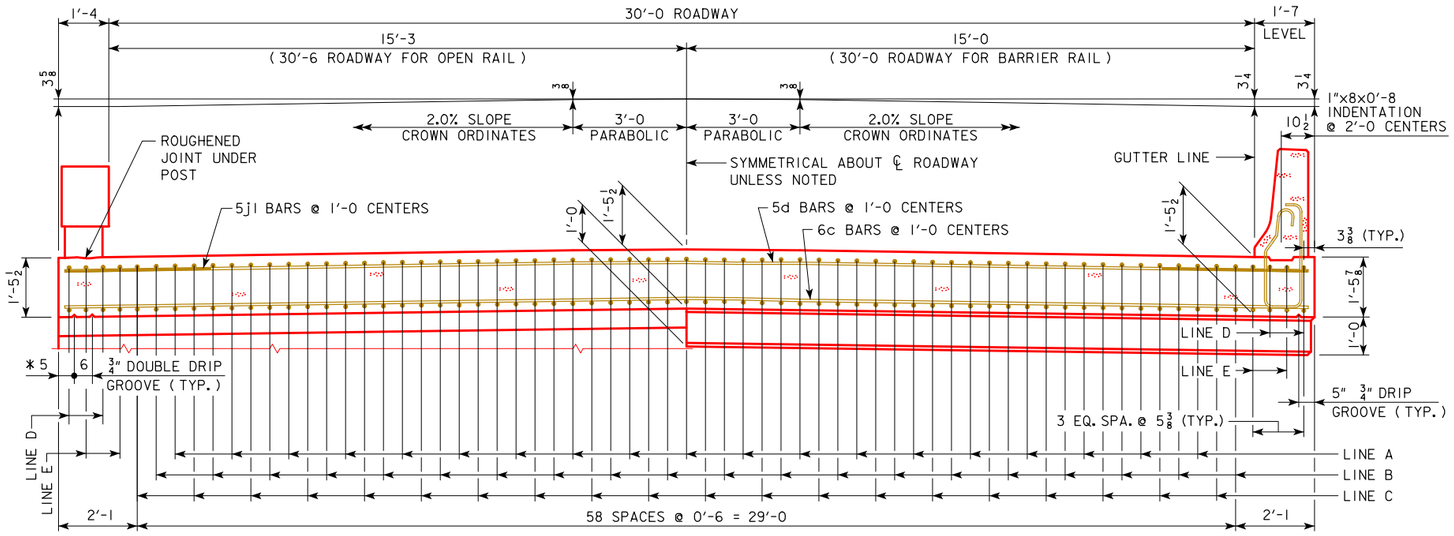
NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 100'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-08B-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.



HALF SECTION NEAR ABUTMENT

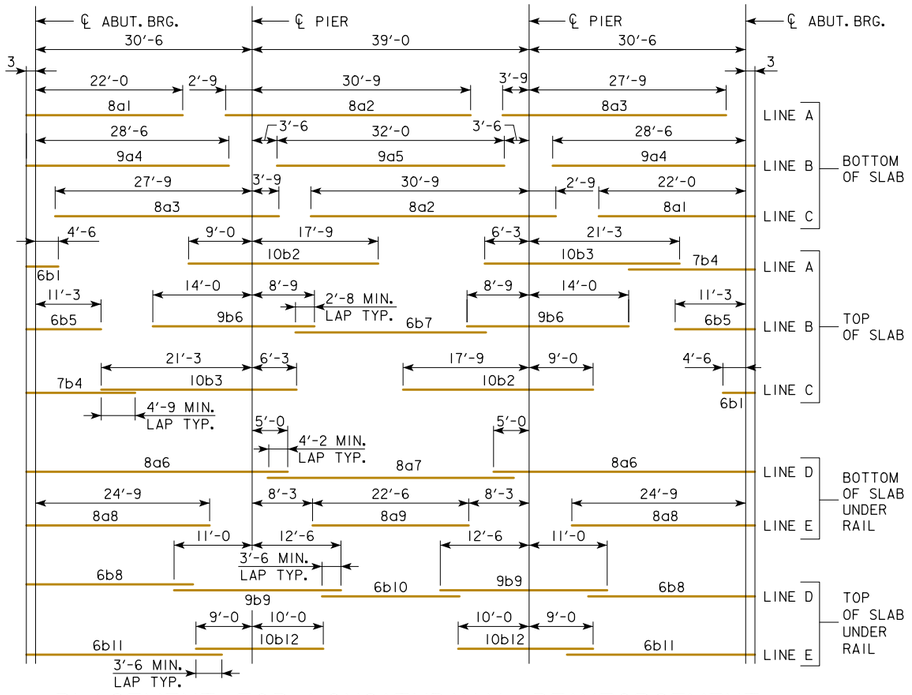
HALF SECTION NEAR PIER

* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

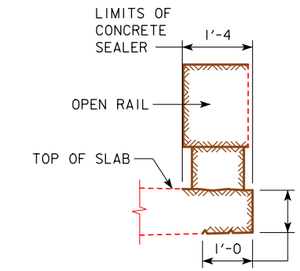
SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 48.37 SQ. FT.

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 48.42 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



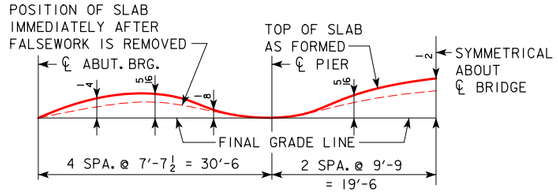
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020 LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 100'-0 BRIDGE

EPOXY COATED REINFORCING

J30-08E-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 100' BRIDGE

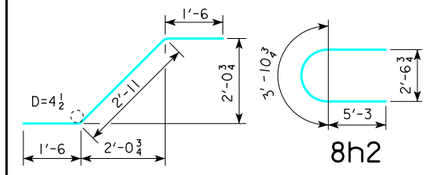
LOCATION \ SKEW	SHAPE	BAR	0° NO.	0° LENGTH	0° WEIGHT	15° NO.	15° LENGTH	15° WEIGHT	30° NO.	30° LENGTH	30° WEIGHT	45° NO.	45° LENGTH	45° WEIGHT
SLAB LONGITUDINAL BOTTOM		8a1	39	21'-3	2213	39	21'-3	2213	39	21'-3	2213	39	21'-3	2213
SLAB LONGITUDINAL BOTTOM		8a2	39	31'-5	3272	39	31'-5	3272	39	31'-5	3272	39	31'-5	3272
SLAB LONGITUDINAL BOTTOM		8a3	39	29'-6	3072	39	29'-6	3072	39	29'-6	3072	39	29'-6	3072
SLAB LONGITUDINAL BOTTOM		9a4	40	27'-6	3740	40	27'-6	3740	40	27'-6	3740	40	27'-6	3740
SLAB LONGITUDINAL BOTTOM		9a5	20	29'-6	2006	20	29'-6	2006	20	29'-6	2006	20	29'-6	2006
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a6	8	35'-9	764	8	35'-9	764	8	35'-9	764	8	35'-9	764
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a7	4	34'-8	371	4	34'-8	371	4	34'-8	371	4	34'-8	371
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a8	8	24'-0	513	8	24'-0	513	8	24'-0	513	8	24'-0	513
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	4	20'-6	219	4	20'-6	219	4	20'-6	219	4	20'-6	219
SLAB LONGITUDINAL TOP		6b1	39	6'-9	396	39	6'-9	396	39	6'-9	396	39	6'-9	396
SLAB LONGITUDINAL TOP		10b2	39	24'-9	4154	39	24'-9	4154	39	24'-9	4154	39	24'-9	4154
SLAB LONGITUDINAL TOP		10b3	39	25'-6	4280	39	25'-6	4280	39	25'-6	4280	39	25'-6	4280
SLAB LONGITUDINAL TOP		7b4	39	16'-8	1329	39	16'-8	1329	39	16'-8	1329	39	16'-8	1329
SLAB LONGITUDINAL TOP		6b5	40	13'-6	812	40	13'-6	812	40	13'-6	812	40	13'-6	812
SLAB LONGITUDINAL TOP		9b6	40	21'-3	2890	40	21'-3	2890	40	21'-3	2890	40	21'-3	2890
SLAB LONGITUDINAL TOP		6b7	20	27'-6	827	20	27'-6	827	20	27'-6	827	20	27'-6	827
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	25'-8	309	8	25'-8	309	8	25'-8	309	8	25'-8	309
SLAB LONGITUDINAL TOP, AT RAIL		9b9	8	22'-0	599	8	22'-0	599	8	22'-0	599	8	22'-0	599
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	21'-4	129	4	21'-4	129	4	21'-4	129	4	21'-4	129
SLAB LONGITUDINAL TOP, AT RAIL		6b11	8	27'-11	336	8	27'-11	336	8	27'-11	336	8	27'-11	336
SLAB LONGITUDINAL TOP, AT RAIL		10b12	8	17'-0	586	8	17'-0	586	8	17'-0	586	8	17'-0	586
SLAB TRANSVERSE, BOTTOM		6c1	97	32'-10	4784	97	34'-0	4954	84	32'-10	4143	70	32'-10	3453
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	97	32'-10	3322	97	34'-0	3440	84	32'-10	2877	70	32'-10	2398
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	48	7'-5	372	48	7'-5	372	64	7'-5	496	64	7'-5	496
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	192	8'-6	1703	192	8'-6	1703	192	8'-6	1703	190	8'-6	1685
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					47,451			47,837			48,261			48,947
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					6461			6461			6461			6461
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					6794			6794			6794			6794
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			53,912			54,298			54,722			55,408
		WITH OPEN RAIL			54,245			54,631			55,055			55,741
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			52,397			52,747			52,931			53,360
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			52,730			53,080			53,264			53,693

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 100' 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.	205.6	206.4	209.1	215.0	201.1	201.6	203.9	208.6
	REINFORCING STEEL	LBS.	53,912	54,298	54,722	55,408	52,397	52,747	52,931	53,360
CONCRETE BARRIER OR OPEN RAIL		LIN. FT.	222.0	222.2	222.9	224.5	222.0	222.2	222.9	224.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE)	C.Y.	205.4	206.2	208.9	214.8	200.8	201.4	203.7	208.4
	REINFORCING STEEL	LBS.	54,245	54,631	55,055	55,741	52,730	53,080	53,264	53,693

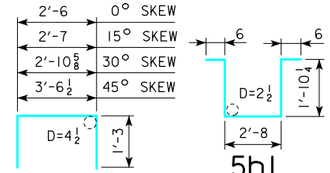
* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



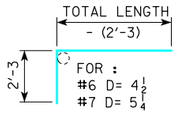
6e4

8h2

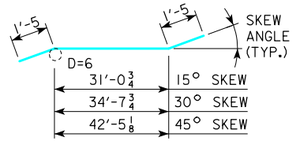


6e3

5h1



6b1, 7b4,
6b5, 6b8, AND 6b11



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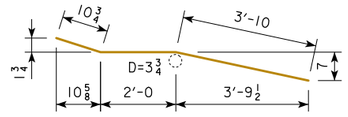
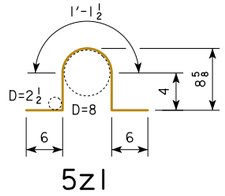


5n3



5z1

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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 100'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-09B-06

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 100' 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	22'-3	2317	39	22'-3	2317	39	22'-3	2317	39	22'-3	2317
SLAB LONGITUDINAL BOTTOM		8a2	39	33'-6	3489	39	33'-6	3489	39	33'-6	3489	39	33'-6	3489
SLAB LONGITUDINAL BOTTOM		8a3	39	31'-6	3281	39	31'-6	3281	39	31'-6	3281	39	31'-6	3281
SLAB LONGITUDINAL BOTTOM		9a4	40	28'-9	3910	40	28'-9	3910	40	28'-9	3910	40	28'-9	3910
SLAB LONGITUDINAL BOTTOM		9a5	20	32'-0	2176	20	32'-0	2176	20	32'-0	2176	20	32'-0	2176
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a6	8	35'-9	764	8	35'-9	764	8	35'-9	764	8	35'-9	764
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a7	4	37'-4	399	4	37'-4	399	4	37'-4	399	4	37'-4	399
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a8	8	25'-0	534	8	25'-0	534	8	25'-0	534	8	25'-0	534
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	4	22'-6	241	4	22'-6	241	4	22'-6	241	4	22'-6	241
SLAB LONGITUDINAL TOP		6b1	39	7'-0	411	39	7'-0	411	39	7'-0	411	39	7'-0	411
SLAB LONGITUDINAL TOP		10b2	39	26'-9	4490	39	26'-9	4490	39	26'-9	4490	39	26'-9	4490
SLAB LONGITUDINAL TOP		10b3	39	27'-6	4615	39	27'-6	4615	39	27'-6	4615	39	27'-6	4615
SLAB LONGITUDINAL TOP		7b4	39	16'-6	1316	39	16'-6	1316	39	16'-6	1316	39	16'-6	1316
SLAB LONGITUDINAL TOP		6b5	40	13'-9	827	40	13'-9	827	40	13'-9	827	40	13'-9	827
SLAB LONGITUDINAL TOP		9b6	40	22'-9	3094	40	22'-9	3094	40	22'-9	3094	40	22'-9	3094
SLAB LONGITUDINAL TOP		6b7	20	26'-10	807	20	26'-10	807	20	26'-10	807	20	26'-10	807
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	25'-6	307	8	25'-6	307	8	25'-6	307	8	25'-6	307
SLAB LONGITUDINAL TOP, AT RAIL		9b9	8	23'-6	640	8	23'-6	640	8	23'-6	640	8	23'-6	640
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	21'-0	127	4	21'-0	127	4	21'-0	127	4	21'-0	127
SLAB LONGITUDINAL TOP, AT RAIL		6b11	8	27'-6	331	8	27'-6	331	8	27'-6	331	8	27'-6	331
SLAB LONGITUDINAL TOP, AT RAIL		10b12	8	19'-0	655	8	19'-0	655	8	19'-0	655	8	19'-0	655
SLAB TRANSVERSE, BOTTOM		6c1	97	32'-10	4784	97	34'-0	4954	84	32'-10	4143	70	32'-10	3453
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	97	32'-10	3322	97	34'-0	3440	84	32'-10	2877	70	32'-10	2398
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	48	7'-5	372	48	7'-5	372	64	7'-5	496	64	7'-5	496
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	192	8'-6	1703	192	8'-6	1703	192	8'-6	1703	190	8'-6	1685
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
** PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					49,365			49,751			50,175			50,861
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					6461			6461			6461			6461
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					6794			6794			6794			6794
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			55,826			56,212			56,636			57,322
		WITH OPEN RAIL			56,159			56,545			56,969			57,655
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			54,311			54,661			54,845			55,274
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			54,644			54,994			55,178			55,607

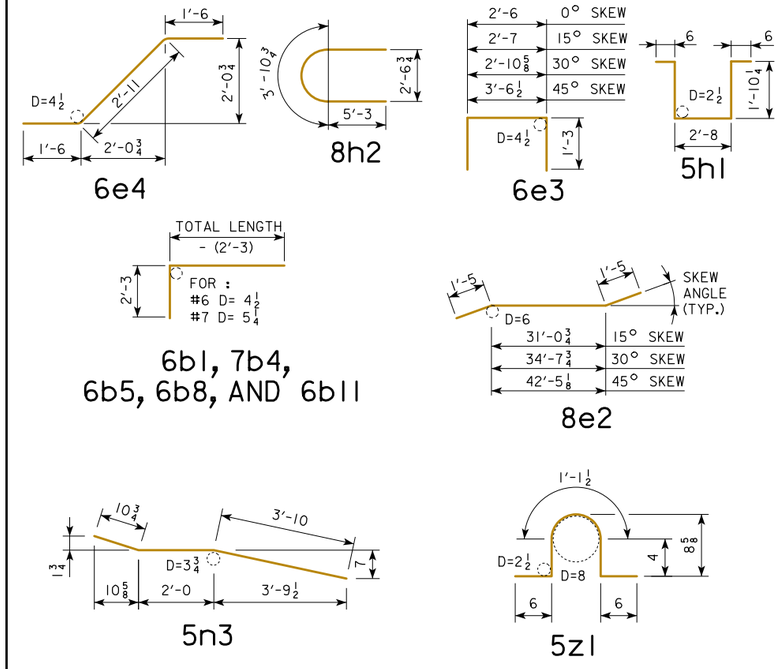
** BARS MAY BE NON-COATED AT CONTRACTOR'S OPTION.

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 100' 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.	205.6	206.4	209.1	215.0	201.0	201.6	203.9	208.6
	REINFORCING STEEL EPOXY COATED LBS.	55,826	56,212	56,636	57,322	54,311	54,661	54,845	55,274
CONCRETE BARRIER OR OPEN RAIL	LIN. FT.	222.0	222.2	222.9	224.5	222.0	222.2	222.9	224.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE) C.Y.	205.4	206.2	208.9	214.8	200.8	201.4	203.7	208.4
	REINFORCING STEEL EPOXY COATED LBS.	56,159	56,545	56,969	57,655	54,644	54,994	55,178	55,607

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

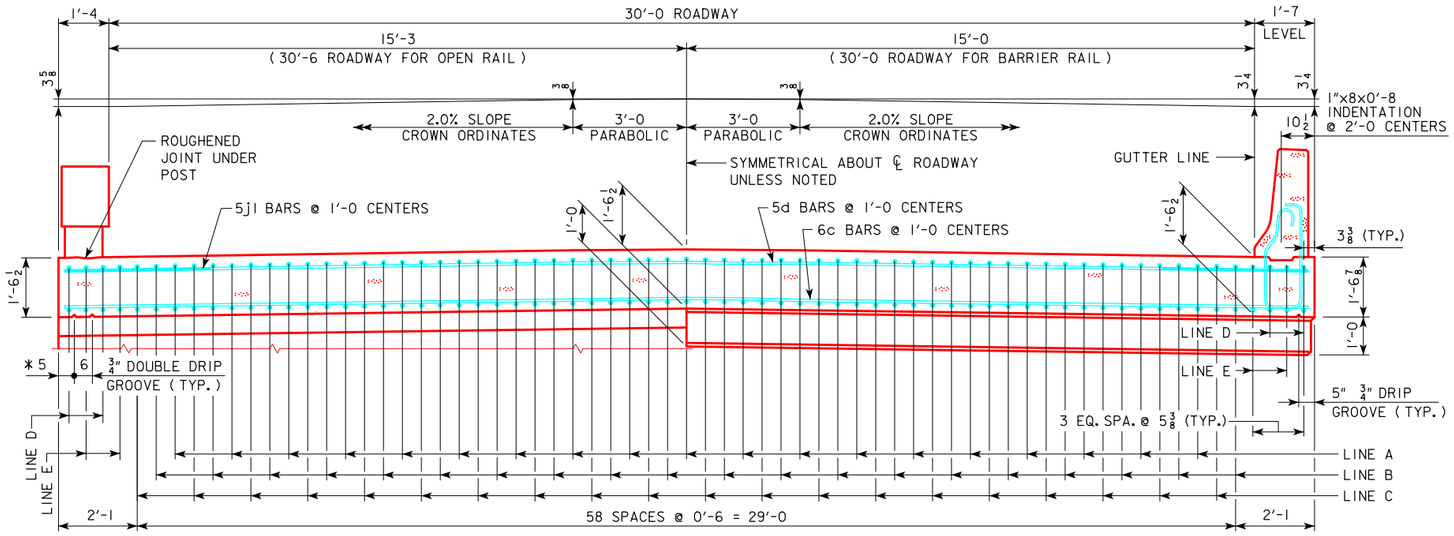
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS
100'-0 BRIDGE

EPOXY COATED REINFORCING

J30-09E-06



HALF SECTION NEAR ABUTMENT

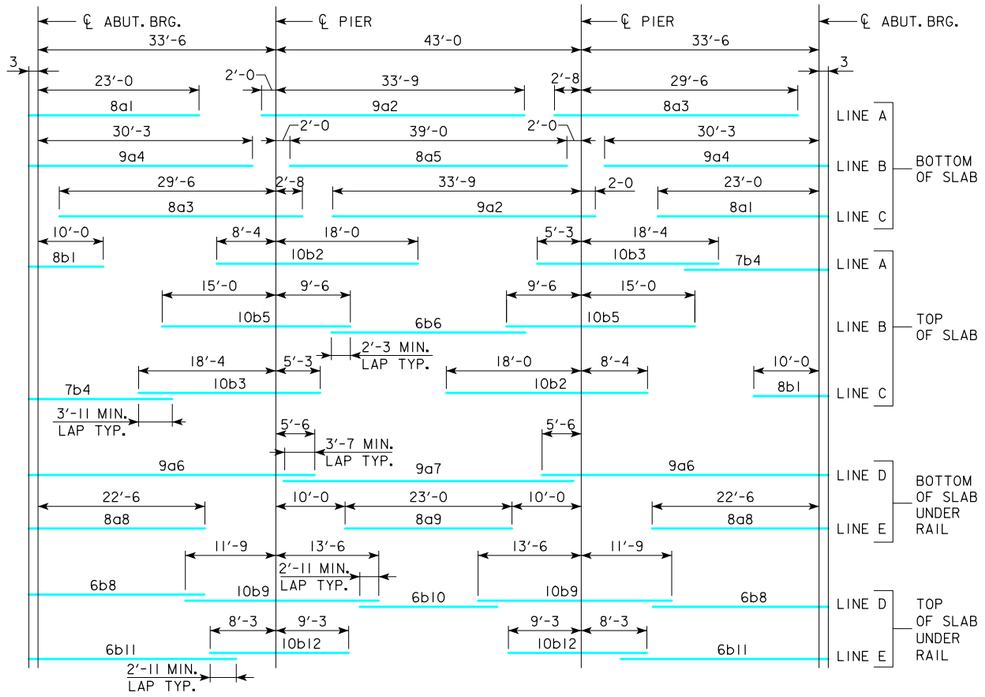
* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 51.14 SQ. FT.

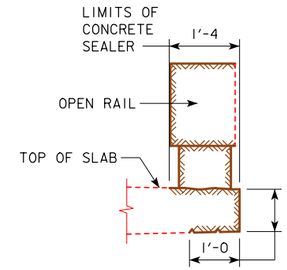
HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 51.19 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



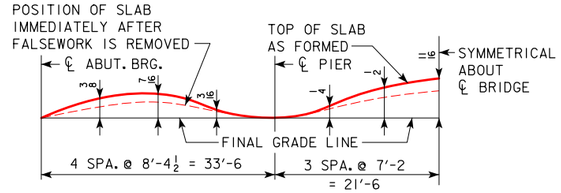
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

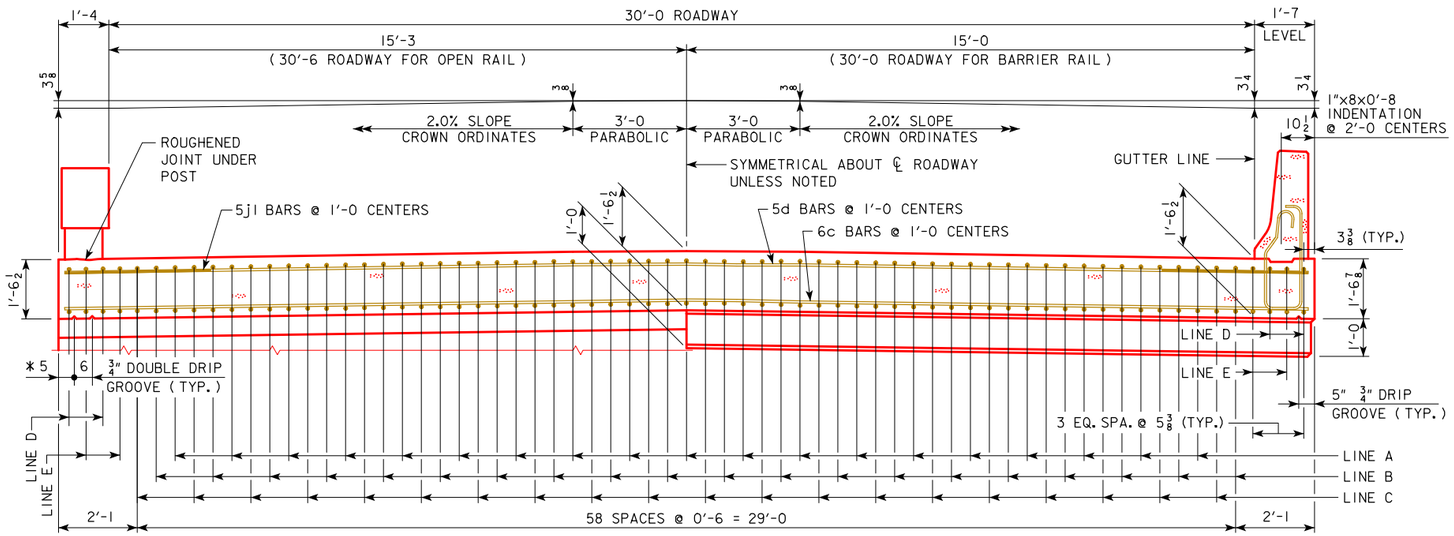
NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 110'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-10B-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.



HALF SECTION NEAR ABUTMENT

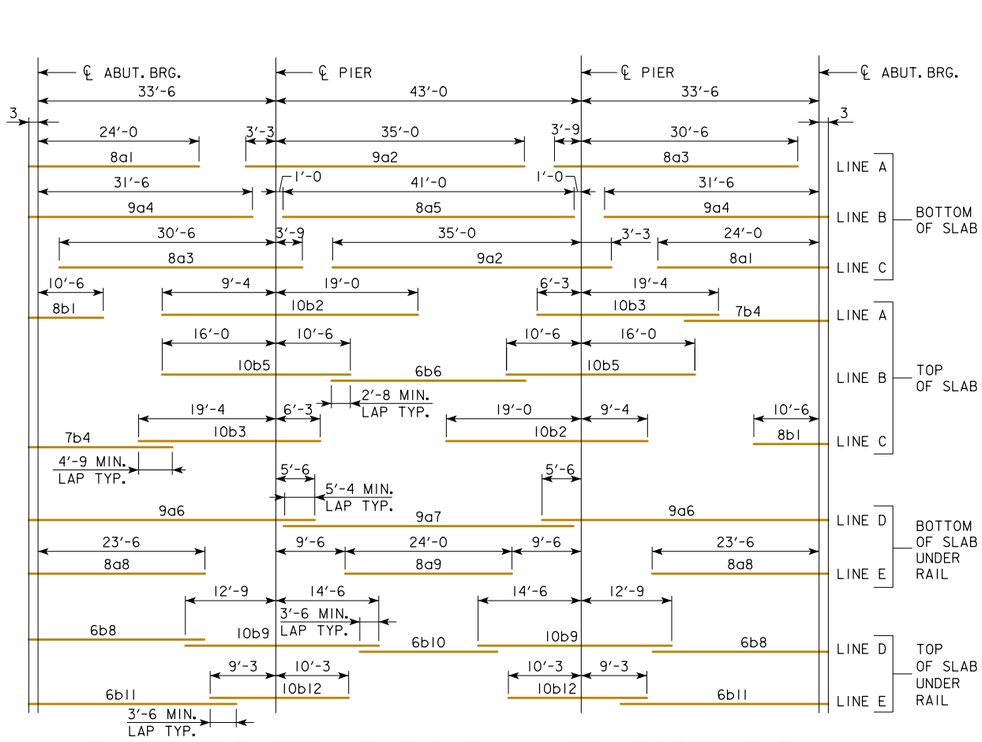
* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 51.14 SQ. FT.

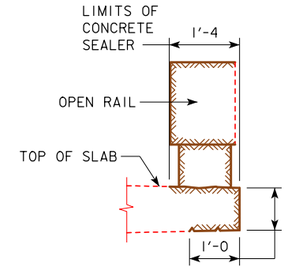
HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 51.19 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



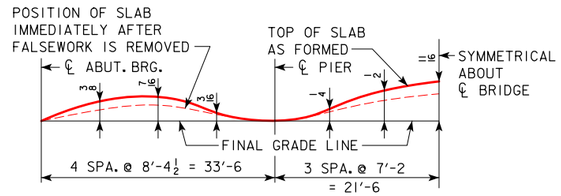
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS
110'-0 BRIDGE

EPOXY COATED REINFORCING

J30-10E-06

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 110' BRIDGE

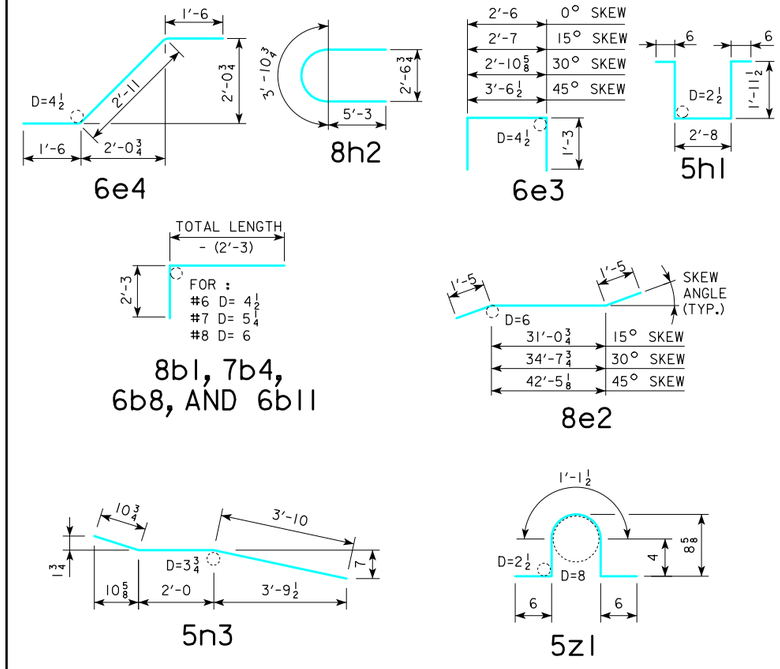
LOCATION \ SKEW	SHAPE	BAR	0° NO.	0° LENGTH	0° WEIGHT	15° NO.	15° LENGTH	15° WEIGHT	30° NO.	30° LENGTH	30° WEIGHT	45° NO.	45° LENGTH	45° WEIGHT
SLAB LONGITUDINAL BOTTOM		8a1	39	23'-3	2422	39	23'-3	2422	39	23'-3	2422	39	23'-3	2422
SLAB LONGITUDINAL BOTTOM		9a2	39	35'-9	4741	39	35'-9	4741	39	35'-9	4741	39	35'-9	4741
SLAB LONGITUDINAL BOTTOM		8a3	39	32'-2	3350	39	32'-2	3350	39	32'-2	3350	39	32'-2	3350
SLAB LONGITUDINAL BOTTOM		9a4	40	30'-6	4148	40	30'-6	4148	40	30'-6	4148	40	30'-6	4148
SLAB LONGITUDINAL BOTTOM		8a5	20	39'-0	2083	20	39'-0	2083	20	39'-0	2083	20	39'-0	2083
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a6	8	39'-3	1068	8	39'-3	1068	8	39'-3	1068	8	39'-3	1068
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a7	4	39'-2	533	4	39'-2	533	4	39'-2	533	4	39'-2	533
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a8	8	22'-9	486	8	22'-9	486	8	22'-9	486	8	22'-9	486
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	4	23'-0	246	4	23'-0	246	4	23'-0	246	4	23'-0	246
SLAB LONGITUDINAL TOP		8b1	39	12'-6	1302	39	12'-6	1302	39	12'-6	1302	39	12'-6	1302
SLAB LONGITUDINAL TOP		10b2	39	26'-4	4420	39	26'-4	4420	39	26'-4	4420	39	26'-4	4420
SLAB LONGITUDINAL TOP		10b3	39	23'-7	3958	39	23'-7	3958	39	23'-7	3958	39	23'-7	3958
SLAB LONGITUDINAL TOP		7b4	39	21'-7	1721	39	21'-7	1721	39	21'-7	1721	39	21'-7	1721
SLAB LONGITUDINAL TOP		10b5	40	24'-6	4217	40	24'-6	4217	40	24'-6	4217	40	24'-6	4217
SLAB LONGITUDINAL TOP		6b6	20	28'-6	857	20	28'-6	857	20	28'-6	857	20	28'-6	857
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	27'-2	327	8	27'-2	327	8	27'-2	327	8	27'-2	327
SLAB LONGITUDINAL TOP, AT RAIL		10b9	8	25'-3	870	8	25'-3	870	8	25'-3	870	8	25'-3	870
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	21'-10	132	4	21'-10	132	4	21'-10	132	4	21'-10	132
SLAB LONGITUDINAL TOP, AT RAIL		6b11	8	30'-8	369	8	30'-8	369	8	30'-8	369	8	30'-8	369
SLAB LONGITUDINAL TOP, AT RAIL		10b12	8	17'-6	603	8	17'-6	603	8	17'-6	603	8	17'-6	603
SLAB TRANSVERSE, BOTTOM		6c1	107	32'-10	5277	107	34'-0	5465	94	32'-10	4636	80	32'-10	3946
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	107	32'-10	3665	107	34'-0	3795	94	32'-10	3220	80	32'-10	2740
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	54	7'-7	428	54	7'-7	428	54	7'-7	428	72	7'-7	570
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	212	8'-6	1880	212	8'-6	1880	212	8'-6	1880	210	8'-6	1862
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					53,556			53,972			54,242			55,069
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					6962			6962			6962			6962
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					7261			7261			7261			7261
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			60,518			60,934			61,204			62,031
		WITH OPEN RAIL			60,817			61,233			61,503			62,330
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			58,947			59,327			59,481			59,909
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			59,246			59,626			59,780			60,208

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 110' 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.	234.5	235.2	238.0	243.7	229.9	230.5	232.7	237.3
	REINFORCING STEEL	LBS.	60,518	60,934	61,204	62,031	58,947	59,327	59,481	59,909
CONCRETE BARRIER OR OPEN RAIL		LIN. FT.	242.0	242.2	242.9	244.5	242.0	242.2	242.9	244.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE)	C.Y.	234.3	235.0	237.8	243.5	229.7	230.3	232.5	237.1
	REINFORCING STEEL	LBS.	60,817	61,233	61,503	62,330	59,246	59,626	59,780	60,208

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 110'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-11B-06

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 110' 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	24'-3	2526	39	24'-3	2526	39	24'-3	2526	39	24'-3	2526
SLAB LONGITUDINAL BOTTOM		9a2	39	38'-3	5072	39	38'-3	5072	39	38'-3	5072	39	38'-3	5072
SLAB LONGITUDINAL BOTTOM		8a3	39	34'-3	3567	39	34'-3	3567	39	34'-3	3567	39	34'-3	3567
SLAB LONGITUDINAL BOTTOM		9a4	40	31'-9	4318	40	31'-9	4318	40	31'-9	4318	40	31'-9	4318
SLAB LONGITUDINAL BOTTOM		8a5	20	41'-0	2190	20	41'-0	2190	20	41'-0	2190	20	41'-0	2190
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a6	8	39'-3	1068	8	39'-3	1068	8	39'-3	1068	8	39'-3	1068
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a7	4	42'-8	581	4	42'-8	581	4	42'-8	581	4	42'-8	581
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a8	8	23'-9	508	8	23'-9	508	8	23'-9	508	8	23'-9	508
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	4	24'-0	257	4	24'-0	257	4	24'-0	257	4	24'-0	257
SLAB LONGITUDINAL TOP		8b1	39	13'-0	1354	39	13'-0	1354	39	13'-0	1354	39	13'-0	1354
SLAB LONGITUDINAL TOP		10b2	39	28'-4	4755	39	28'-4	4755	39	28'-4	4755	39	28'-4	4755
SLAB LONGITUDINAL TOP		10b3	39	25'-7	4294	39	25'-7	4294	39	25'-7	4294	39	25'-7	4294
SLAB LONGITUDINAL TOP		7b4	39	21'-5	1708	39	21'-5	1708	39	21'-5	1708	39	21'-5	1708
SLAB LONGITUDINAL TOP		10b5	40	26'-6	4562	40	26'-6	4562	40	26'-6	4562	40	26'-6	4562
SLAB LONGITUDINAL TOP		6b6	20	27'-4	822	20	27'-4	822	20	27'-4	822	20	27'-4	822
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	26'-9	322	8	26'-9	322	8	26'-9	322	8	26'-9	322
SLAB LONGITUDINAL TOP, AT RAIL		10b9	8	27'-3	939	8	27'-3	939	8	27'-3	939	8	27'-3	939
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	21'-0	127	4	21'-0	127	4	21'-0	127	4	21'-0	127
SLAB LONGITUDINAL TOP, AT RAIL		6b11	8	30'-3	364	8	30'-3	364	8	30'-3	364	8	30'-3	364
SLAB LONGITUDINAL TOP, AT RAIL		10b12	8	19'-6	672	8	19'-6	672	8	19'-6	672	8	19'-6	672
SLAB TRANSVERSE, BOTTOM		6c1	107	32'-10	5277	107	34'-0	5465	94	32'-10	4636	80	32'-10	3946
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	107	32'-10	3665	107	34'-0	3795	94	32'-10	3220	80	32'-10	2740
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	54	7'-7	428	54	7'-7	428	54	7'-7	428	72	7'-7	570
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	212	8'-6	1880	212	8'-6	1880	212	8'-6	1880	210	8'-6	1862
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
** PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					55,709			56,125			56,395			57,222
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					6962			6962			6962			6962
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					7261			7261			7261			7261
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			62,671			63,087			63,357			64,184
		WITH OPEN RAIL			62,970			63,386			63,656			64,483
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			61,100			61,480			61,634			62,062
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			61,399			61,779			61,933			62,361

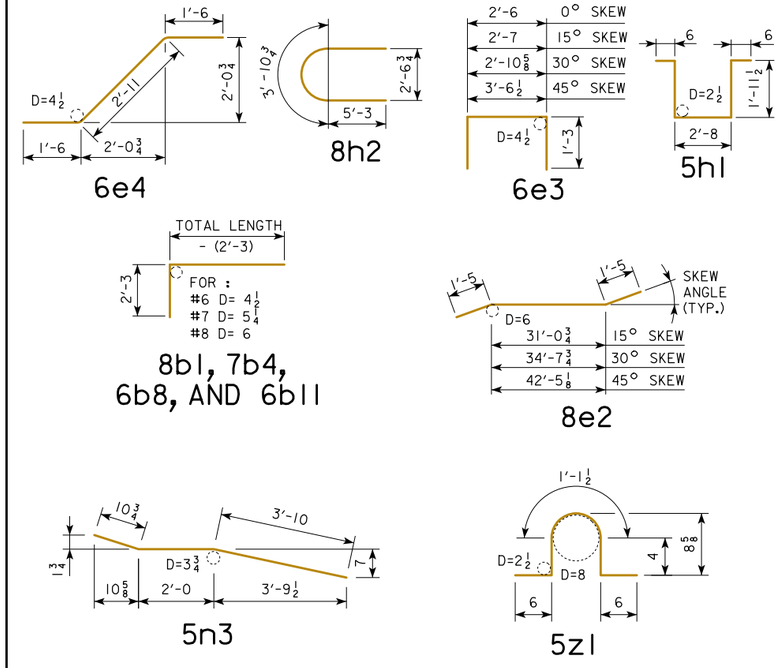
** BARS MAY BE NON-COATED AT CONTRACTOR'S OPTION.

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 110' 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.	234.5	235.2	238.0	243.7	229.9	230.5	232.7	237.3
	REINFORCING STEEL EPOXY COATED LBS.	62,671	63,087	63,357	64,184	61,100	61,480	61,634	62,062
CONCRETE BARRIER OR OPEN RAIL	LIN. FT.	242.0	242.2	242.9	244.5	242.0	242.2	242.9	244.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE) C.Y.	234.3	235.0	237.8	243.5	229.7	230.3	232.5	237.1
	REINFORCING STEEL EPOXY COATED LBS.	62,970	63,386	63,656	64,483	61,399	61,779	61,933	62,361

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

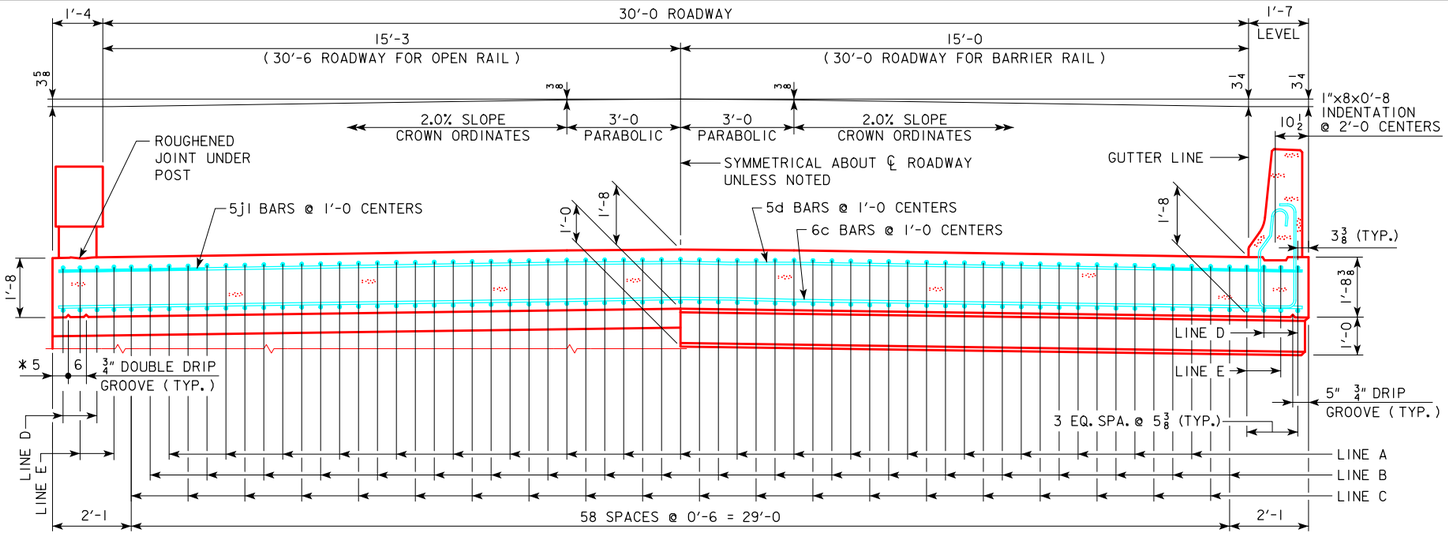
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 110'-0 BRIDGE

EPOXY COATED REINFORCING

J30-11E-06



HALF SECTION NEAR ABUTMENT

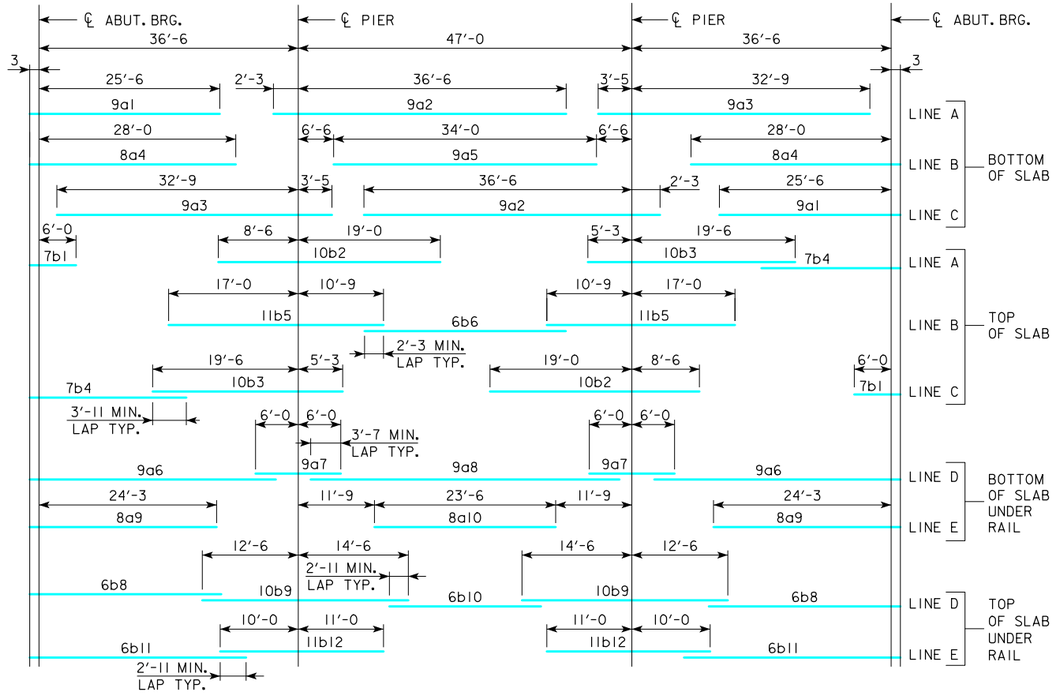
HALF SECTION NEAR PIER

* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

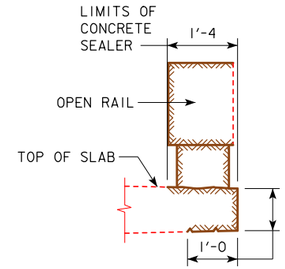
SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 55.28 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 55.33 SQ. FT.



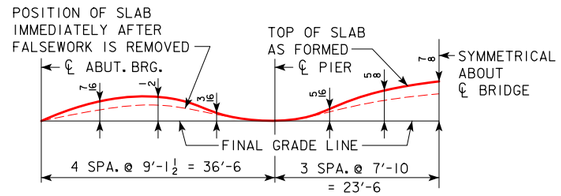
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

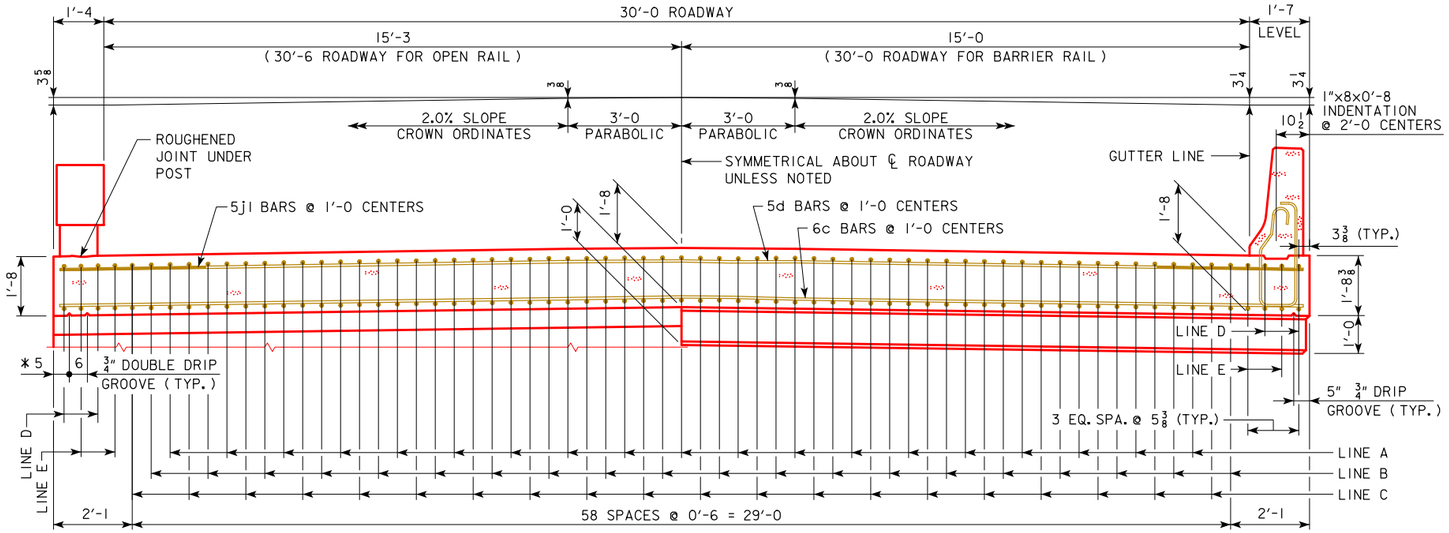
NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 120'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-12B-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.



HALF SECTION NEAR ABUTMENT

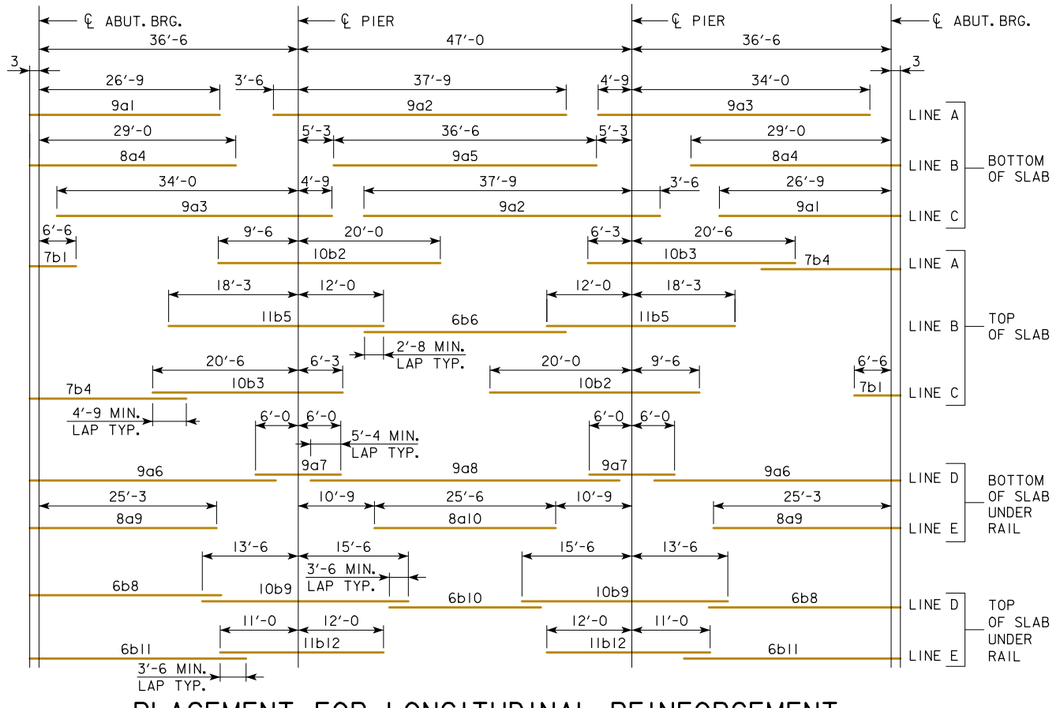
* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 55.28 SQ. FT.

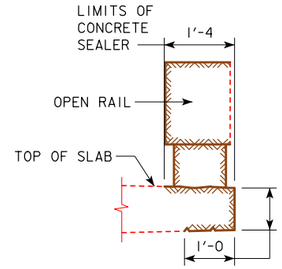
HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 55.33 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



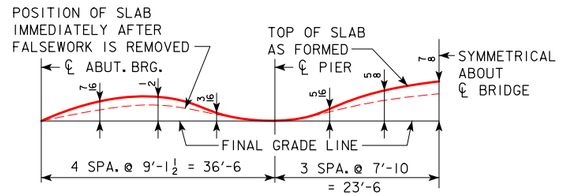
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 120'-0 BRIDGE

EPOXY COATED REINFORCING

J30-12E-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 120' BRIDGE

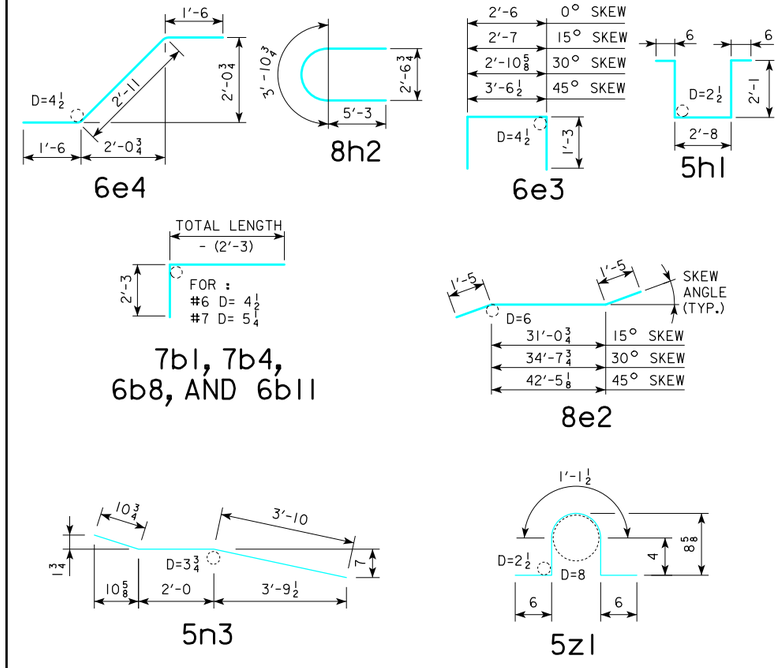
LOCATION \ SKEW	SHAPE	BAR	0° NO.	0° LENGTH	0° WEIGHT	15° NO.	15° LENGTH	15° WEIGHT	30° NO.	30° LENGTH	30° WEIGHT	45° NO.	45° LENGTH	45° WEIGHT
SLAB LONGITUDINAL BOTTOM		9a1	39	25'-9	3415	39	25'-9	3415	39	25'-9	3415	39	25'-9	3415
SLAB LONGITUDINAL BOTTOM		9a2	39	38'-9	5139	39	38'-9	5139	39	38'-9	5139	39	38'-9	5139
SLAB LONGITUDINAL BOTTOM		9a3	39	36'-2	4796	39	36'-2	4796	39	36'-2	4796	39	36'-2	4796
SLAB LONGITUDINAL BOTTOM		8a4	40	28'-3	3018	40	28'-3	3018	40	28'-3	3018	40	28'-3	3018
SLAB LONGITUDINAL BOTTOM		9a5	20	34'-0	2312	20	34'-0	2312	20	34'-0	2312	20	34'-0	2312
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a6	8	34'-4	934	8	34'-4	934	8	34'-4	934	8	34'-4	934
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a7	8	12'-0	327	8	12'-0	327	8	12'-0	327	8	12'-0	327
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a8	4	42'-2	574	4	42'-2	574	4	42'-2	574	4	42'-2	574
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	8	24'-6	524	8	24'-6	524	8	24'-6	524	8	24'-6	524
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a10	4	23'-6	251	4	23'-6	251	4	23'-6	251	4	23'-6	251
SLAB LONGITUDINAL TOP		7b1	39	8'-6	678	39	8'-6	678	39	8'-6	678	39	8'-6	678
SLAB LONGITUDINAL TOP		10b2	39	27'-6	4615	39	27'-6	4615	39	27'-6	4615	39	27'-6	4615
SLAB LONGITUDINAL TOP		10b3	39	24'-9	4154	39	24'-9	4154	39	24'-9	4154	39	24'-9	4154
SLAB LONGITUDINAL TOP		7b4	39	23'-5	1867	39	23'-5	1867	39	23'-5	1867	39	23'-5	1867
SLAB LONGITUDINAL TOP		11b5	40	27'-9	5898	40	27'-9	5898	40	27'-9	5898	40	27'-9	5898
SLAB LONGITUDINAL TOP		6b6	20	30'-0	902	20	30'-0	902	20	30'-0	902	20	30'-0	902
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	29'-5	354	8	29'-5	354	8	29'-5	354	8	29'-5	354
SLAB LONGITUDINAL TOP, AT RAIL		10b9	8	27'-0	930	8	27'-0	930	8	27'-0	930	8	27'-0	930
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	23'-10	144	4	23'-10	144	4	23'-10	144	4	23'-10	144
SLAB LONGITUDINAL TOP, AT RAIL		6b11	8	31'-11	384	8	31'-11	384	8	31'-11	384	8	31'-11	384
SLAB LONGITUDINAL TOP, AT RAIL		11b12	8	21'-0	893	8	21'-0	893	8	21'-0	893	8	21'-0	893
SLAB TRANSVERSE, BOTTOM		6c1	117	32'-10	5770	117	34'-0	5975	104	32'-10	5129	90	32'-10	4439
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	117	32'-10	4007	117	34'-0	4150	104	32'-10	3562	90	32'-10	3083
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	40	7'-10	327	40	7'-10	327	60	7'-10	491	60	7'-10	491
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	232	8'-6	2057	232	8'-6	2057	232	8'-6	2057	230	8'-6	2040
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					58,723			59,169			59,573			60,260
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					7536			7536			7536			7536
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					8061			8061			8061			8061
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			66,259			66,705			67,109			67,796
		WITH OPEN RAIL			66,784			67,230			67,634			68,321
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			64,789			65,199			65,323			65,753
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			65,314			65,724			65,848			66,278

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 120' 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.	271.4	272.1	274.8	280.4	266.8	267.4	269.6	274.1
	REINFORCING STEEL	LBS.	66,259	66,705	67,109	67,796	64,789	65,199	65,323	65,753
CONCRETE BARRIER OR OPEN RAIL		LIN. FT.	262.0	262.2	262.9	264.5	262.0	262.2	262.9	264.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE)	C.Y.	271.2	271.9	274.6	280.2	266.6	267.1	269.3	273.8
	REINFORCING STEEL	LBS.	66,784	67,230	67,634	68,321	65,314	65,724	65,848	66,278

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 120'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-13B-06

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 120' 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		9a1	39	27'-0	3581	39	27'-0	3581	39	27'-0	3581	39	27'-0	3581
SLAB LONGITUDINAL BOTTOM		9a2	39	41'-3	5470	39	41'-3	5470	39	41'-3	5470	39	41'-3	5470
SLAB LONGITUDINAL BOTTOM		9a3	39	38'-9	5139	39	38'-9	5139	39	38'-9	5139	39	38'-9	5139
SLAB LONGITUDINAL BOTTOM		8a4	40	29'-3	3124	40	29'-3	3124	40	29'-3	3124	40	29'-3	3124
SLAB LONGITUDINAL BOTTOM		9a5	20	36'-6	2482	20	36'-6	2482	20	36'-6	2482	20	36'-6	2482
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a6	8	36'-1	982	8	36'-1	982	8	36'-1	982	8	36'-1	982
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a7	8	12'-0	327	8	12'-0	327	8	12'-0	327	8	12'-0	327
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a8	4	45'-8	622	4	45'-8	622	4	45'-8	622	4	45'-8	622
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	8	25'-6	545	8	25'-6	545	8	25'-6	545	8	25'-6	545
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a10	4	25'-6	273	4	25'-6	273	4	25'-6	273	4	25'-6	273
SLAB LONGITUDINAL TOP		7b1	39	9'-0	718	39	9'-0	718	39	9'-0	718	39	9'-0	718
SLAB LONGITUDINAL TOP		10b2	39	29'-6	4951	39	29'-6	4951	39	29'-6	4951	39	29'-6	4951
SLAB LONGITUDINAL TOP		10b3	39	26'-9	4490	39	26'-9	4490	39	26'-9	4490	39	26'-9	4490
SLAB LONGITUDINAL TOP		7b4	39	23'-3	1854	39	23'-3	1854	39	23'-3	1854	39	23'-3	1854
SLAB LONGITUDINAL TOP		11b5	40	30'-3	6429	40	30'-3	6429	40	30'-3	6429	40	30'-3	6429
SLAB LONGITUDINAL TOP		6b6	20	28'-4	852	20	28'-4	852	20	28'-4	852	20	28'-4	852
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	29'-0	349	8	29'-0	349	8	29'-0	349	8	29'-0	349
SLAB LONGITUDINAL TOP, AT RAIL		10b9	8	29'-0	999	8	29'-0	999	8	29'-0	999	8	29'-0	999
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	23'-0	139	4	23'-0	139	4	23'-0	139	4	23'-0	139
SLAB LONGITUDINAL TOP, AT RAIL		6b11	8	31'-6	379	8	31'-6	379	8	31'-6	379	8	31'-6	379
SLAB LONGITUDINAL TOP, AT RAIL		11b12	8	23'-0	978	8	23'-0	978	8	23'-0	978	8	23'-0	978
SLAB TRANSVERSE, BOTTOM		6c1	117	32'-10	5770	117	34'-0	5975	104	32'-10	5129	90	32'-10	4439
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	117	32'-10	4007	117	34'-0	4150	104	32'-10	3562	90	32'-10	3083
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	40	7'-10	327	40	7'-10	327	60	7'-10	491	60	7'-10	491
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	232	8'-6	2057	232	8'-6	2057	232	8'-6	2057	230	8'-6	2040
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
** PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					61,297			61,743			62,147			62,834
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					7536			7536			7536			7536
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					8061			8061			8061			8061
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			68,833			69,279			69,683			70,370
		WITH OPEN RAIL			69,358			69,804			70,208			70,895
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			67,363			67,773			67,897			68,327
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			67,888			68,298			68,422			68,852

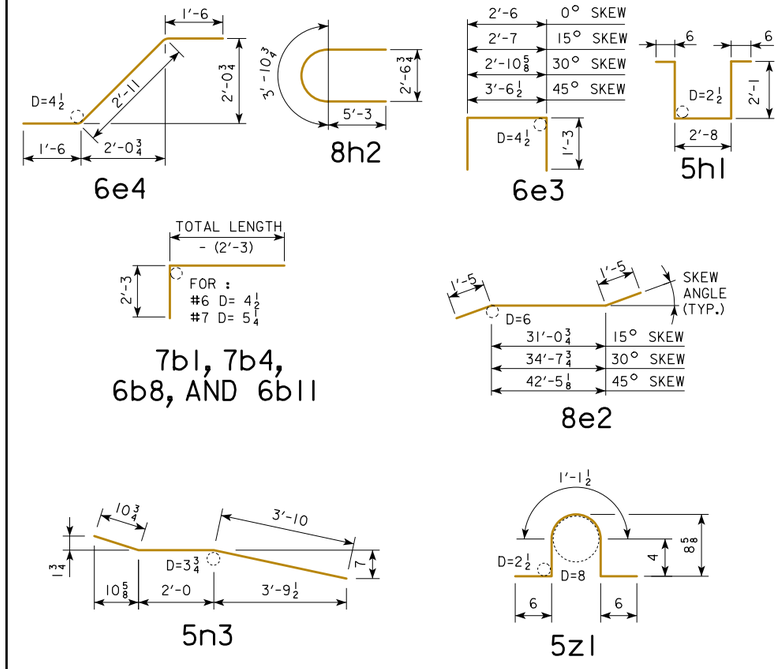
** BARS MAY BE NON-COATED AT CONTRACTOR'S OPTION.

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 120' 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.	271.4	272.1	274.8	280.4	266.8	267.4	269.6	274.1
	REINFORCING STEEL EPOXY COATED LBS.	68,833	69,279	69,683	70,370	67,363	67,773	67,897	68,327
CONCRETE BARRIER OR OPEN RAIL	LIN. FT.	262.0	262.2	262.9	264.5	262.0	262.2	262.9	264.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE) C.Y.	271.2	271.9	274.6	280.2	266.6	267.1	269.3	273.8
	REINFORCING STEEL EPOXY COATED LBS.	69,358	69,804	70,208	70,895	67,888	68,298	68,422	68,852

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

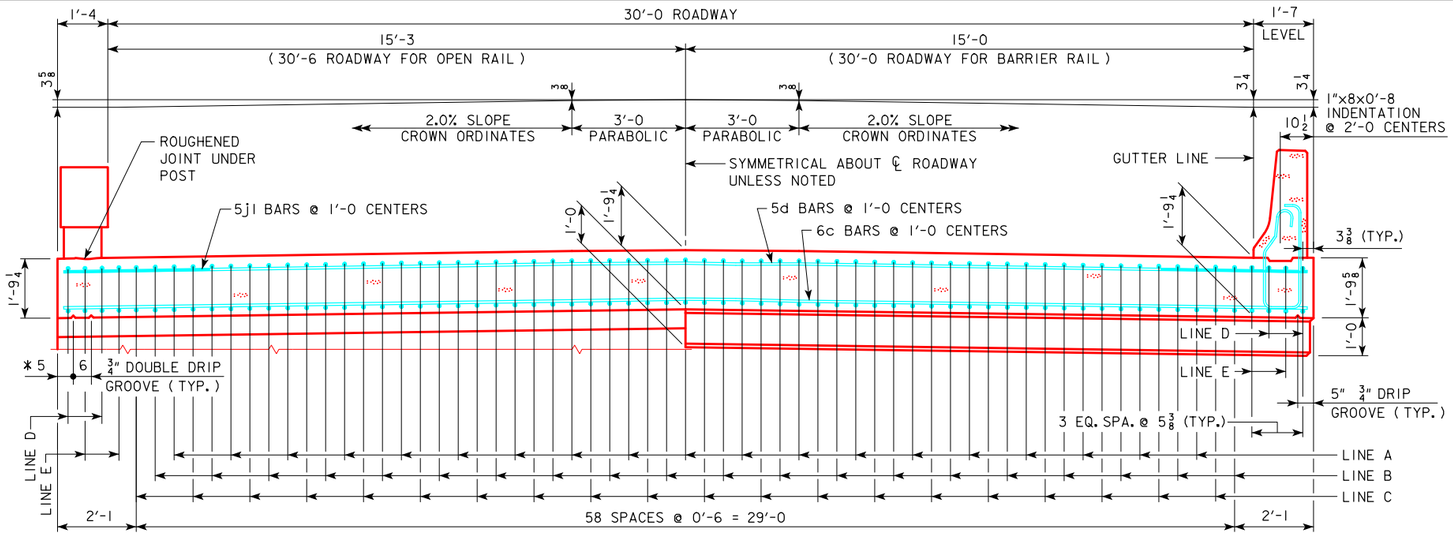
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 120'-0 BRIDGE

EPOXY COATED REINFORCING

J30-13E-06



HALF SECTION NEAR ABUTMENT

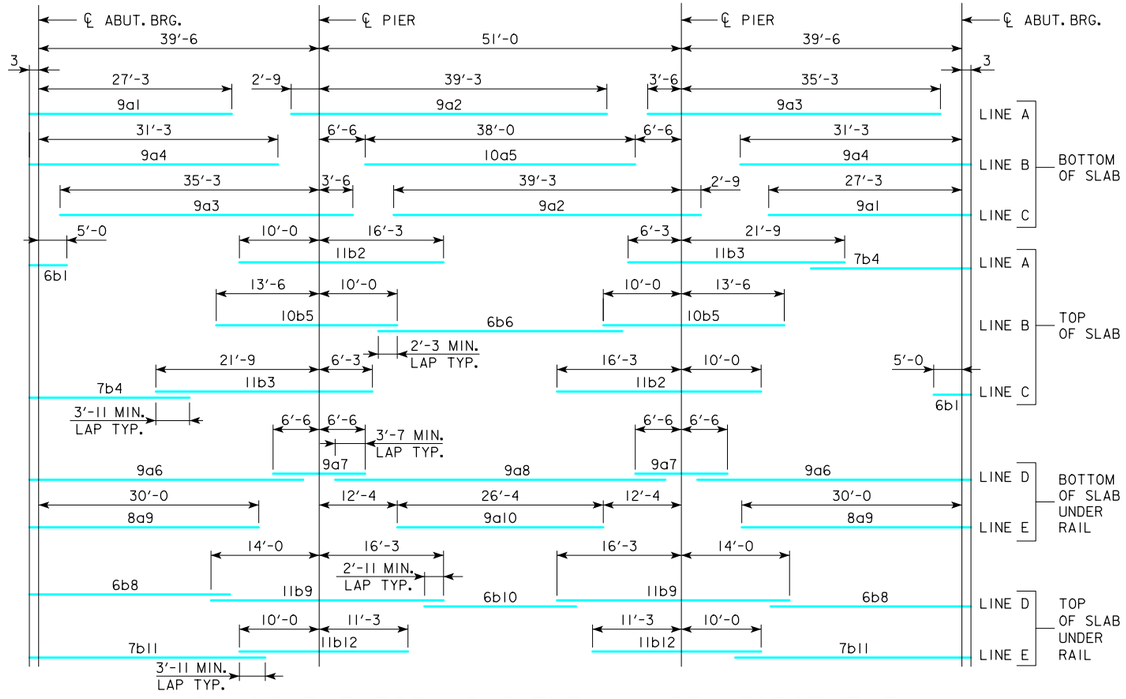
* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 58.74 SQ. FT.

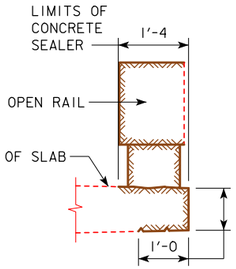
HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 58.79 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



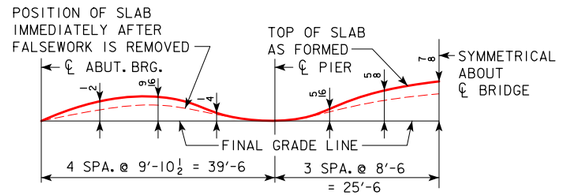
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

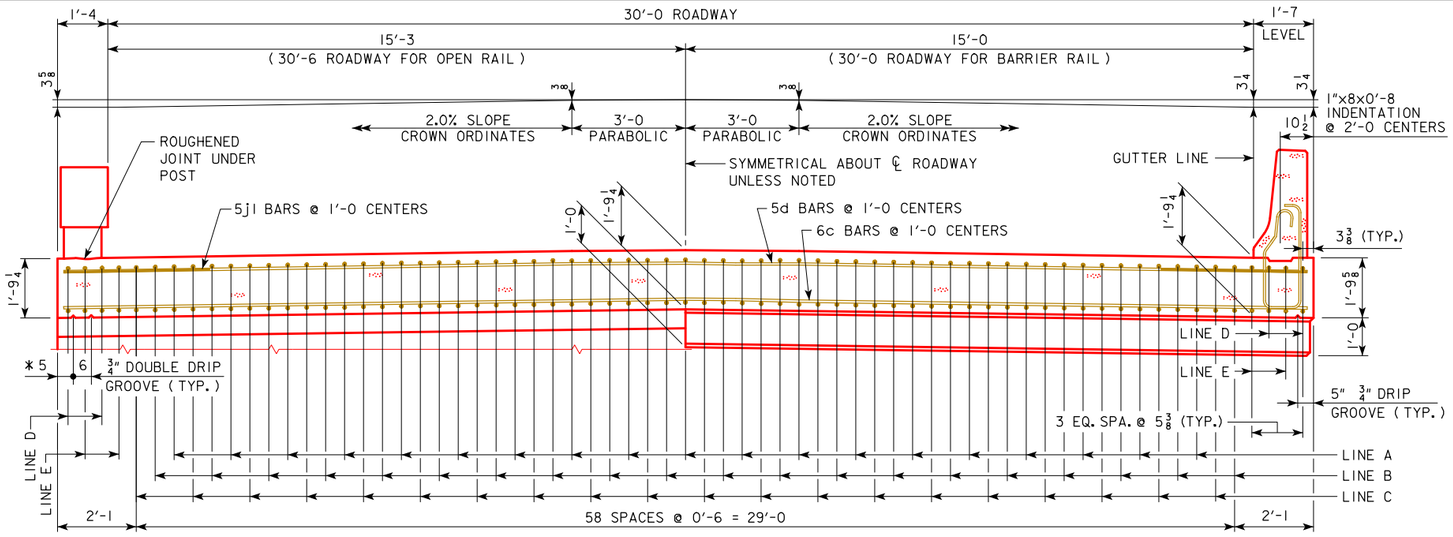
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 130'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-14B-06



HALF SECTION NEAR ABUTMENT

* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 58.74 SQ. FT.

HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 58.79 SQ. FT.

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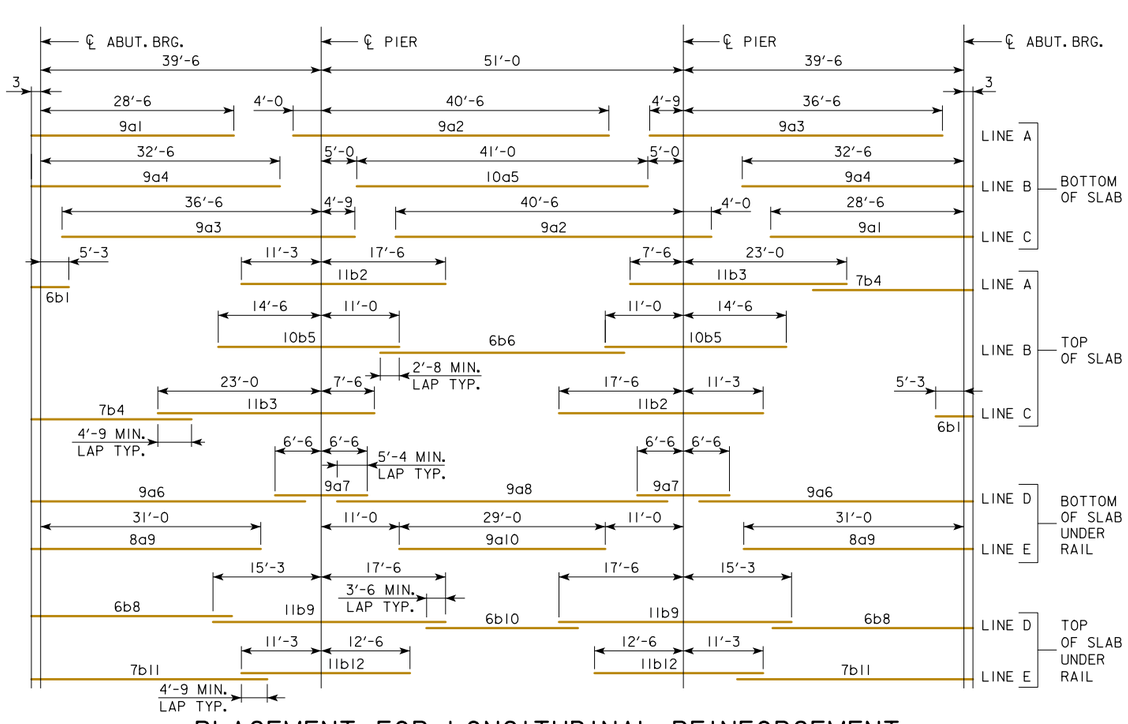
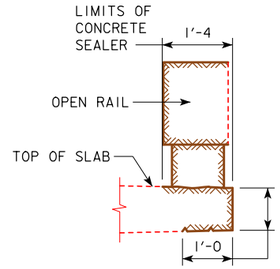


PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

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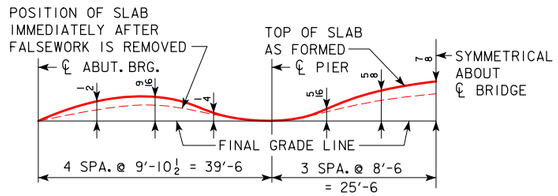


FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 130'-0 BRIDGE

EPOXY COATED REINFORCING

J30-14E-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 130' BRIDGE

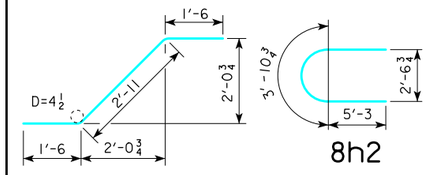
LOCATION \ SKEW	SHAPE	BAR	0° NO.	0° LENGTH	0° WEIGHT	15° NO.	15° LENGTH	15° WEIGHT	30° NO.	30° LENGTH	30° WEIGHT	45° NO.	45° LENGTH	45° WEIGHT
SLAB LONGITUDINAL BOTTOM		9a1	39	27'-6	3647	39	27'-6	3647	39	27'-6	3647	39	27'-6	3647
SLAB LONGITUDINAL BOTTOM		9a2	39	42'-0	5570	39	42'-0	5570	39	42'-0	5570	39	42'-0	5570
SLAB LONGITUDINAL BOTTOM		9a3	39	38'-9	5139	39	38'-9	5139	39	38'-9	5139	39	38'-9	5139
SLAB LONGITUDINAL BOTTOM		9a4	40	31'-6	4284	40	31'-6	4284	40	31'-6	4284	40	31'-6	4284
SLAB LONGITUDINAL BOTTOM		10a5	20	38'-0	3271	20	38'-0	3271	20	38'-0	3271	20	38'-0	3271
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a6	8	36'-10	1002	8	36'-10	1002	8	36'-10	1002	8	36'-10	1002
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a7	8	13'-0	354	8	13'-0	354	8	13'-0	354	8	13'-0	354
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a8	4	45'-2	615	4	45'-2	615	4	45'-2	615	4	45'-2	615
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	8	30'-3	647	8	30'-3	647	8	30'-3	647	8	30'-3	647
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a10	4	26'-4	359	4	26'-4	359	4	26'-4	359	4	26'-4	359
SLAB LONGITUDINAL TOP		6b1	39	7'-6	440	39	7'-6	440	39	7'-6	440	39	7'-6	440
SLAB LONGITUDINAL TOP		11b2	39	26'-3	5440	39	26'-3	5440	39	26'-3	5440	39	26'-3	5440
SLAB LONGITUDINAL TOP		11b3	39	28'-0	5802	39	28'-0	5802	39	28'-0	5802	39	28'-0	5802
SLAB LONGITUDINAL TOP		7b4	39	24'-2	1927	39	24'-2	1927	39	24'-2	1927	39	24'-2	1927
SLAB LONGITUDINAL TOP		10b5	40	23'-6	4045	40	23'-6	4045	40	23'-6	4045	40	23'-6	4045
SLAB LONGITUDINAL TOP		6b6	20	35'-6	1067	20	35'-6	1067	20	35'-6	1067	20	35'-6	1067
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	30'-11	372	8	30'-11	372	8	30'-11	372	8	30'-11	372
SLAB LONGITUDINAL TOP, AT RAIL		11b9	8	30'-3	1286	8	30'-3	1286	8	30'-3	1286	8	30'-3	1286
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	24'-4	147	4	24'-4	147	4	24'-4	147	4	24'-4	147
SLAB LONGITUDINAL TOP, AT RAIL		7b11	8	35'-11	588	8	35'-11	588	8	35'-11	588	8	35'-11	588
SLAB LONGITUDINAL TOP, AT RAIL		11b12	8	21'-3	904	8	21'-3	904	8	21'-3	904	8	21'-3	904
SLAB TRANSVERSE, BOTTOM		6c1	127	32'-10	6264	127	34'-0	6486	114	32'-10	5622	100	32'-10	4932
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	127	32'-10	4350	127	34'-0	4504	114	32'-10	3904	100	32'-10	3425
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	7	5'-11	640
PIER CAP HOOPS		5h1	44	8'-1	371	44	8'-1	371	44	8'-1	371	66	8'-1	557
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	252	8'-6	2235	252	8'-6	2235	252	8'-6	2235	250	8'-6	2217
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					64,579			65,053			65,263			66,135
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					8054			8054			8054			8054
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					8573			8573			8573			8573
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			72,636			73,107			73,317			74,189
		WITH OPEN RAIL			73,152			73,626			73,836			74,708
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			71,119			71,557			71,651			72,080
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			71,638			72,076			72,170			72,599

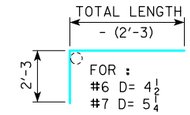
ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 130' BRIDGE

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.	308.1	308.9	311.5	317.0	303.5	304.1	306.2	310.7
	REINFORCING STEEL	LBS.	72,636	73,107	73,317	74,189	71,119	71,557	71,651	72,080
	CONCRETE BARRIER OR OPEN RAIL	LIN. FT.	282.0	282.2	282.9	284.5	282.0	282.2	282.9	284.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE)	C.Y.	307.9	308.6	311.3	316.8	303.3	303.9	306.0	310.4
	REINFORCING STEEL	LBS.	73,152	73,626	73,836	74,708	71,638	72,076	72,170	72,599

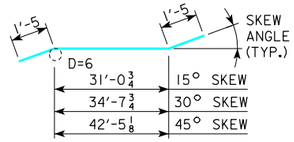
* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS

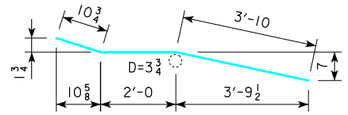




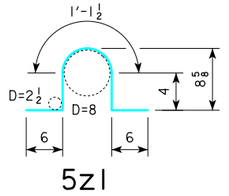
6b1, 7b4,
6b8, AND 7b11



8e2



5n3



5z1

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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 130'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-15B-06

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 130' 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		9a1	39	28'-9	3813	39	28'-9	3813	39	28'-9	3813	39	28'-9	3813
SLAB LONGITUDINAL BOTTOM		9a2	39	44'-6	5901	39	44'-6	5901	39	44'-6	5901	39	44'-6	5901
SLAB LONGITUDINAL BOTTOM		9a3	39	41'-3	5470	39	41'-3	5470	39	41'-3	5470	39	41'-3	5470
SLAB LONGITUDINAL BOTTOM		9a4	40	32'-9	4454	40	32'-9	4454	40	32'-9	4454	40	32'-9	4454
SLAB LONGITUDINAL BOTTOM		10a5	20	41'-0	3529	20	41'-0	3529	20	41'-0	3529	20	41'-0	3529
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a6	8	38'-7	1050	8	38'-7	1050	8	38'-7	1050	8	38'-7	1050
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a7	8	13'-0	354	8	13'-0	354	8	13'-0	354	8	13'-0	354
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a8	4	48'-8	662	4	48'-8	662	4	48'-8	662	4	48'-8	662
SLAB LONGITUDINAL BOTTOM, AT RAIL		8a9	8	31'-3	668	8	31'-3	668	8	31'-3	668	8	31'-3	668
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a10	4	29'-0	395	4	29'-0	395	4	29'-0	395	4	29'-0	395
SLAB LONGITUDINAL TOP		6b1	39	7'-9	454	39	7'-9	454	39	7'-9	454	39	7'-9	454
SLAB LONGITUDINAL TOP		11b2	39	28'-9	5958	39	28'-9	5958	39	28'-9	5958	39	28'-9	5958
SLAB LONGITUDINAL TOP		11b3	39	30'-6	6320	39	30'-6	6320	39	30'-6	6320	39	30'-6	6320
SLAB LONGITUDINAL TOP		7b4	39	23'-9	1894	39	23'-9	1894	39	23'-9	1894	39	23'-9	1894
SLAB LONGITUDINAL TOP		10b5	40	25'-6	4390	40	25'-6	4390	40	25'-6	4390	40	25'-6	4390
SLAB LONGITUDINAL TOP		6b6	20	34'-4	1032	20	34'-4	1032	20	34'-4	1032	20	34'-4	1032
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	30'-3	364	8	30'-3	364	8	30'-3	364	8	30'-3	364
SLAB LONGITUDINAL TOP, AT RAIL		11b9	8	32'-9	1393	8	32'-9	1393	8	32'-9	1393	8	32'-9	1393
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	23'-0	139	4	23'-0	139	4	23'-0	139	4	23'-0	139
SLAB LONGITUDINAL TOP, AT RAIL		7b11	8	35'-6	581	8	35'-6	581	8	35'-6	581	8	35'-6	581
SLAB LONGITUDINAL TOP, AT RAIL		11b12	8	23'-9	1010	8	23'-9	1010	8	23'-9	1010	8	23'-9	1010
SLAB TRANSVERSE, BOTTOM		6c1	127	32'-10	6264	127	34'-0	6486	114	32'-10	5622	100	32'-10	4932
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	127	32'-10	4350	127	34'-0	4504	114	32'-10	3904	100	32'-10	3425
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	44	8'-1	371	44	8'-1	371	44	8'-1	371	66	8'-1	557
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	252	8'-6	2235	252	8'-6	2235	252	8'-6	2235	250	8'-6	2217
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
** PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					67,504			67,978			68,188			69,060
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					8054			8054			8054			8054
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					8573			8573			8573			8573
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			75,558			76,032			76,242			77,114
		WITH OPEN RAIL			76,077			76,551			76,761			77,633
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			74,044			74,482			74,576			75,005
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			74,563			75,001			75,095			75,524

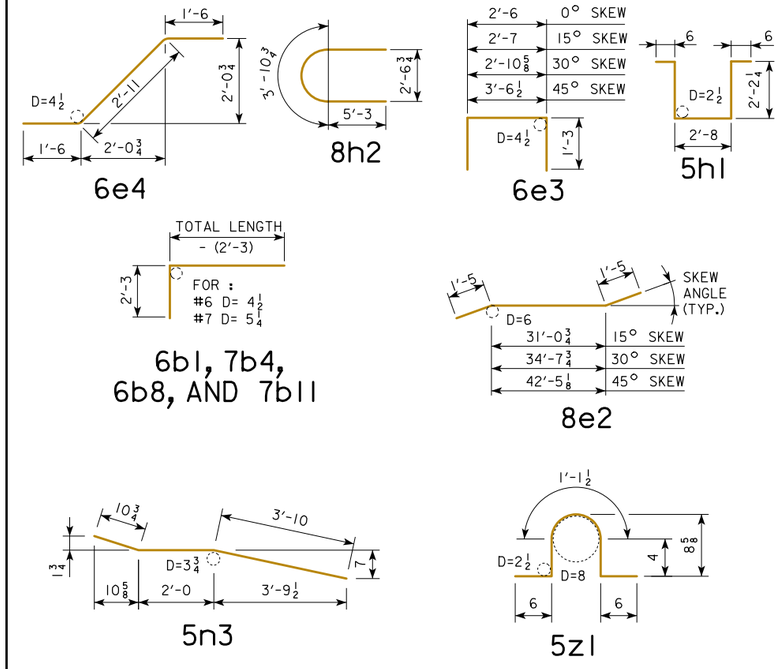
** BARS MAY BE NON-COATED AT CONTRACTOR'S OPTION.

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 130' 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.	308.1	308.9	311.5	317.0	303.5	304.1	306.2	310.7
	REINFORCING STEEL EPOXY COATED LBS.	75,558	76,032	76,242	77,114	74,044	74,482	74,576	75,005
CONCRETE BARRIER OR OPEN RAIL	LIN. FT.	282.0	282.2	282.9	284.5	282.0	282.2	282.9	284.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE) C.Y.	307.9	308.6	311.3	316.8	303.3	303.9	306.0	310.5
	REINFORCING STEEL EPOXY COATED LBS.	76,077	76,551	76,761	77,633	74,563	75,001	75,095	75,524

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

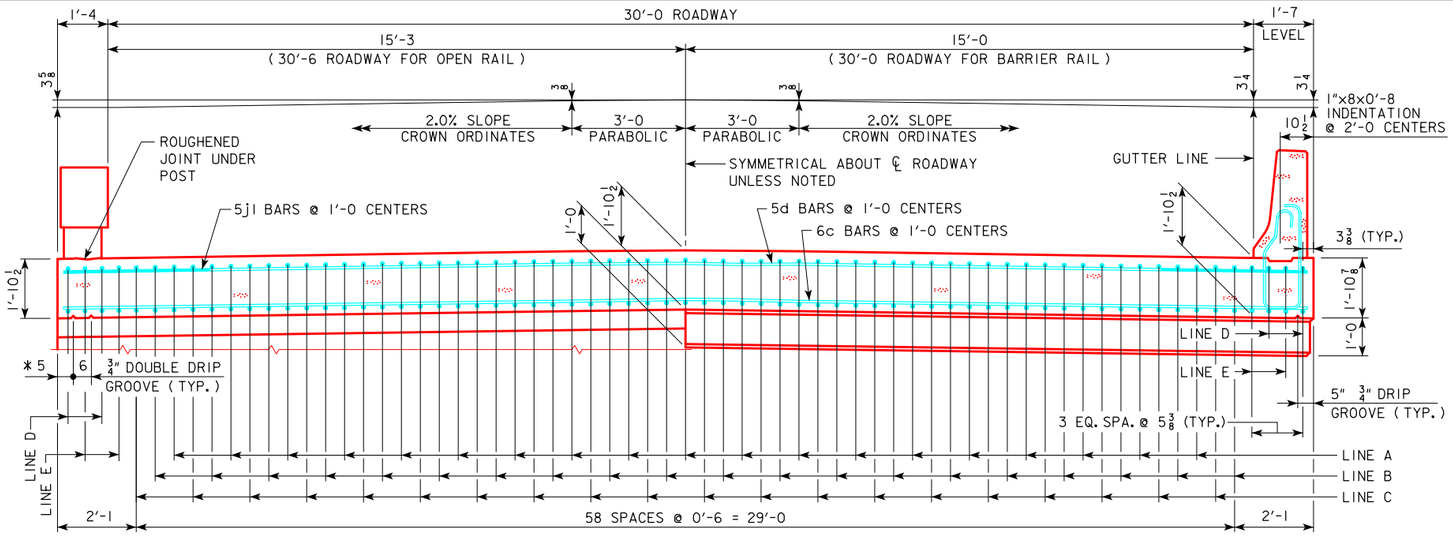
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 130'-0 BRIDGE

EPOXY COATED REINFORCING

J30-15E-06



HALF SECTION NEAR ABUTMENT

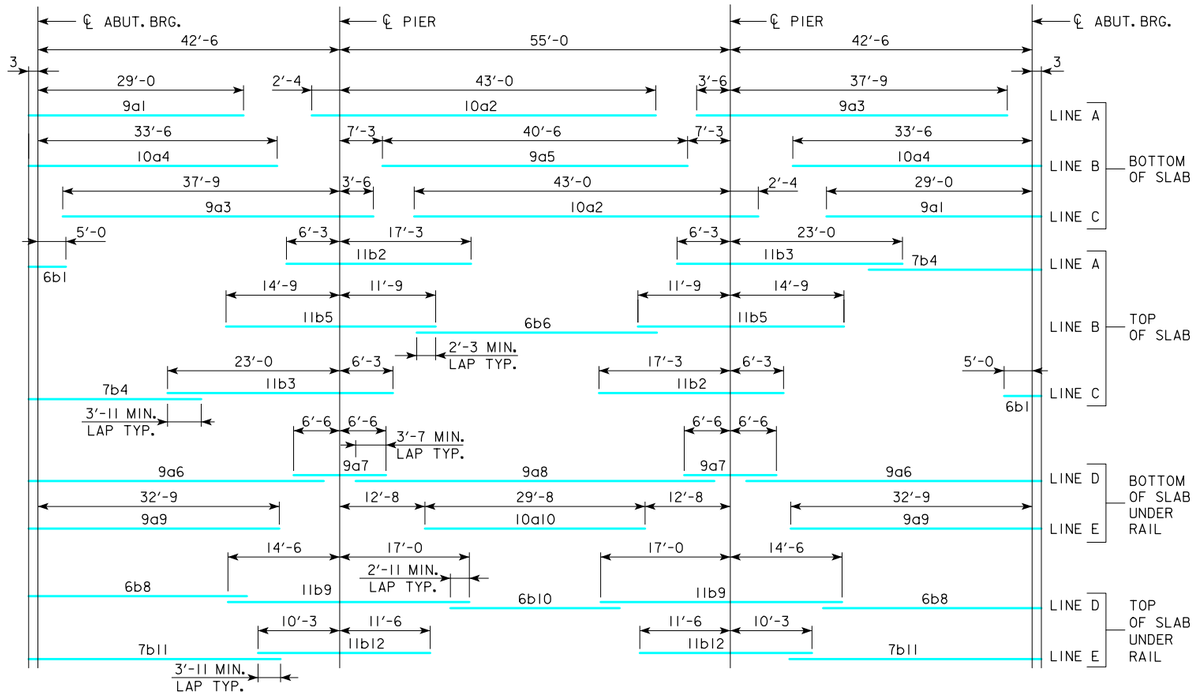
HALF SECTION NEAR PIER

* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

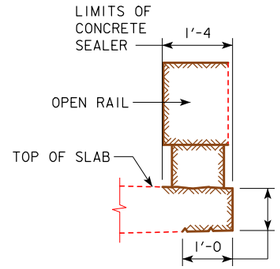
SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 62.19 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 62.24 SQ. FT.



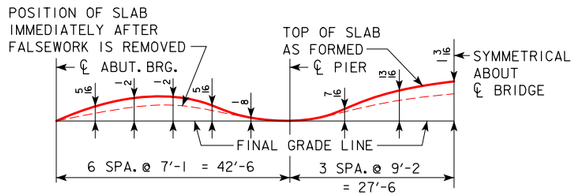
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

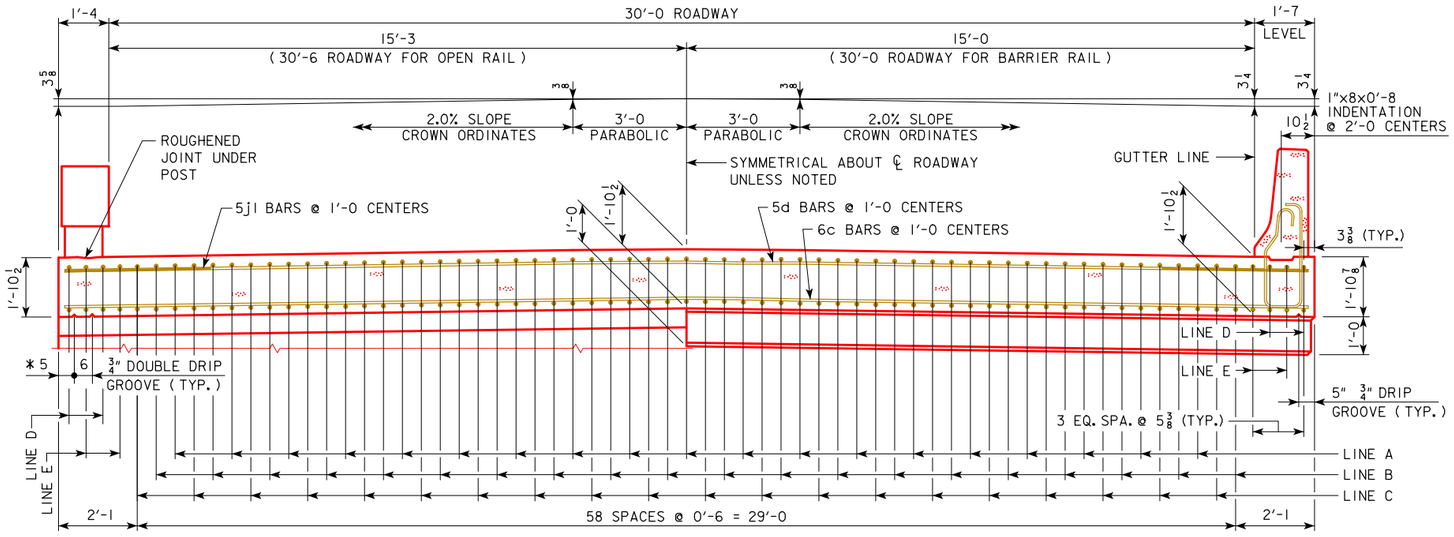
NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 140'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-16B-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.



HALF SECTION NEAR ABUTMENT

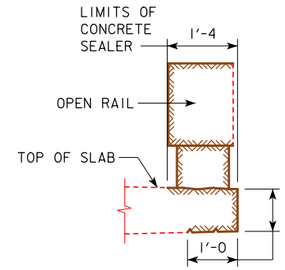
HALF SECTION NEAR PIER

* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 62.19 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.

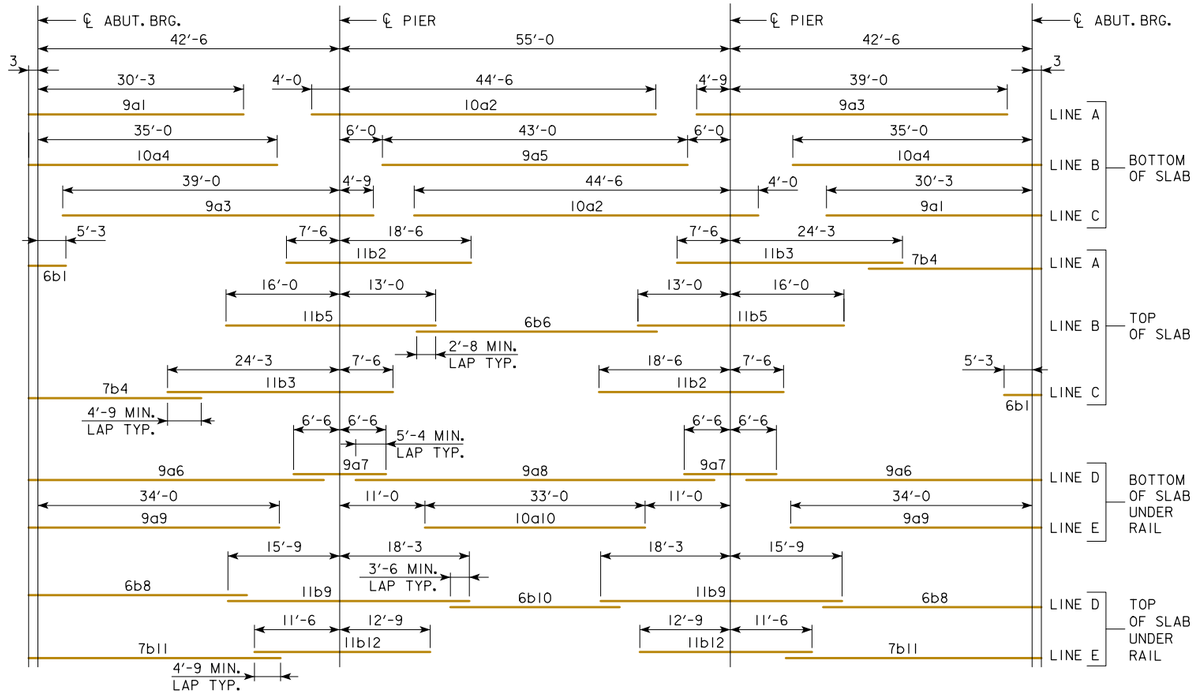
SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 62.24 SQ. FT.



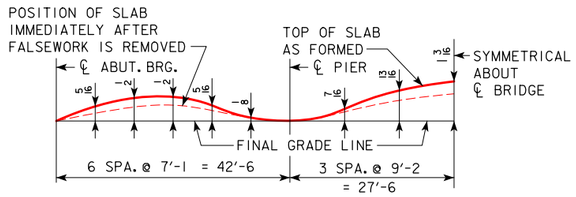
CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



PLACEMENT FOR LONGITUDINAL REINFORCEMENT



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 140'-0" BRIDGE

EPOXY COATED REINFORCING

J30-16E-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 140' BRIDGE

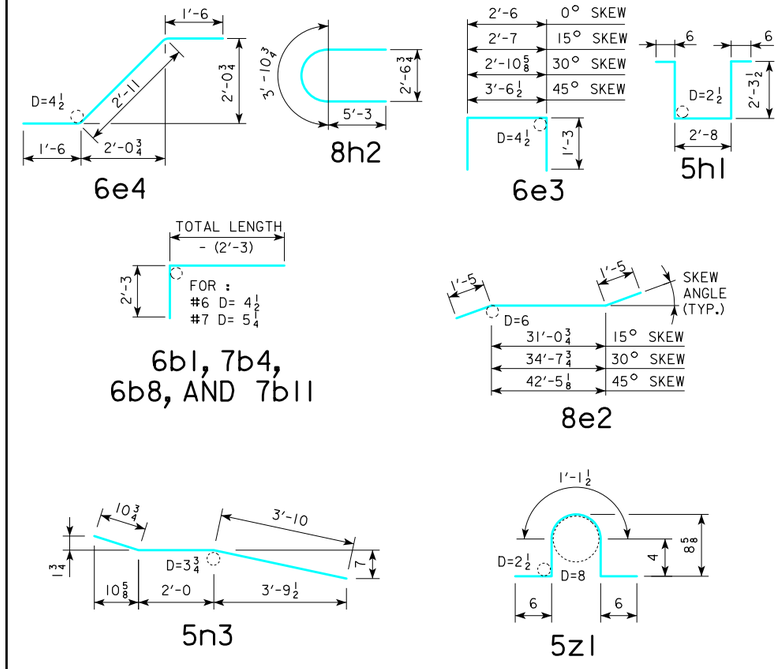
LOCATION \ SKEW	SHAPE	BAR	0° NO.	0° LENGTH	0° WEIGHT	15° NO.	15° LENGTH	15° WEIGHT	30° NO.	30° LENGTH	30° WEIGHT	45° NO.	45° LENGTH	45° WEIGHT
SLAB LONGITUDINAL BOTTOM		9a1	39	29'-3	3879	39	29'-3	3879	39	29'-3	3879	39	29'-3	3879
SLAB LONGITUDINAL BOTTOM		10a2	39	45'-4	7608	39	45'-4	7608	39	45'-4	7608	39	45'-4	7608
SLAB LONGITUDINAL BOTTOM		9a3	39	41'-3	5470	39	41'-3	5470	39	41'-3	5470	39	41'-3	5470
SLAB LONGITUDINAL BOTTOM		10a4	40	33'-9	5810	40	33'-9	5810	40	33'-9	5810	40	33'-9	5810
SLAB LONGITUDINAL BOTTOM		9a5	20	40'-6	2754	20	40'-6	2754	20	40'-6	2754	20	40'-6	2754
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a6	8	39'-10	1084	8	39'-10	1084	8	39'-10	1084	8	39'-10	1084
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a7	8	13'-0	354	8	13'-0	354	8	13'-0	354	8	13'-0	354
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a8	4	49'-2	669	4	49'-2	669	4	49'-2	669	4	49'-2	669
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a9	8	33'-0	898	8	33'-0	898	8	33'-0	898	8	33'-0	898
SLAB LONGITUDINAL BOTTOM, AT RAIL		10a10	4	29'-8	511	4	29'-8	511	4	29'-8	511	4	29'-8	511
SLAB LONGITUDINAL TOP		6b1	39	7'-6	440	39	7'-6	440	39	7'-6	440	39	7'-6	440
SLAB LONGITUDINAL TOP		11b2	39	23'-6	4870	39	23'-6	4870	39	23'-6	4870	39	23'-6	4870
SLAB LONGITUDINAL TOP		11b3	39	29'-3	6061	39	29'-3	6061	39	29'-3	6061	39	29'-3	6061
SLAB LONGITUDINAL TOP		7b4	39	25'-11	2066	39	25'-11	2066	39	25'-11	2066	39	25'-11	2066
SLAB LONGITUDINAL TOP		11b5	40	26'-6	5632	40	26'-6	5632	40	26'-6	5632	40	26'-6	5632
SLAB LONGITUDINAL TOP		6b6	20	36'-0	1082	20	36'-0	1082	20	36'-0	1082	20	36'-0	1082
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	33'-5	402	8	33'-5	402	8	33'-5	402	8	33'-5	402
SLAB LONGITUDINAL TOP, AT RAIL		11b9	8	31'-6	1339	8	31'-6	1339	8	31'-6	1339	8	31'-6	1339
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	26'-10	162	4	26'-10	162	4	26'-10	162	4	26'-10	162
SLAB LONGITUDINAL TOP, AT RAIL		7b11	8	38'-8	633	8	38'-8	633	8	38'-8	633	8	38'-8	633
SLAB LONGITUDINAL TOP, AT RAIL		11b12	8	21'-9	925	8	21'-9	925	8	21'-9	925	8	21'-9	925
SLAB TRANSVERSE, BOTTOM		6c1	137	32'-10	6757	137	34'-0	6997	124	32'-10	6116	110	32'-10	5425
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	137	32'-10	4692	137	34'-0	4859	124	32'-10	4247	110	32'-10	3767
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	44	8'-3	379	44	8'-3	379	44	8'-3	379	66	8'-3	568
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	272	8'-6	2412	272	8'-6	2412	272	8'-6	2412	270	8'-6	2394
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					71,342			71,847			72,028			72,901
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					8602			8602			8602			8602
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					9057			9057			9057			9057
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			79,944			80,449			80,630			81,503
		WITH OPEN RAIL			80,399			80,904			81,085			81,958
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			78,422			78,891			78,956			79,383
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			78,877			79,346			79,411			79,838

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 140' 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.	347.4	348.1	350.7	356.2	342.8	343.4	345.5	349.8
	REINFORCING STEEL	LBS.	79,944	80,449	80,630	81,503	78,422	78,891	78,956	79,383
CONCRETE BARRIER OR OPEN RAIL		LIN. FT.	302.0	302.2	302.9	304.5	302.0	302.2	302.9	304.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE)	C.Y.	347.2	347.9	350.5	355.9	342.6	343.1	345.2	349.5
	REINFORCING STEEL	LBS.	80,399	80,904	81,085	81,958	78,877	79,346	79,411	79,838

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 140'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-17B-06

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 140' 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		9a1	39	30'-6	4045	39	30'-6	4045	39	30'-6	4045	39	30'-6	4045
SLAB LONGITUDINAL BOTTOM		10a2	39	48'-6	8140	39	48'-6	8140	39	48'-6	8140	39	48'-6	8140
SLAB LONGITUDINAL BOTTOM		9a3	39	43'-9	5802	39	43'-9	5802	39	43'-9	5802	39	43'-9	5802
SLAB LONGITUDINAL BOTTOM		10a4	40	35'-3	6068	40	35'-3	6068	40	35'-3	6068	40	35'-3	6068
SLAB LONGITUDINAL BOTTOM		9a5	20	43'-0	2924	20	43'-0	2924	20	43'-0	2924	20	43'-0	2924
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a6	8	41'-7	1132	8	41'-7	1132	8	41'-7	1132	8	41'-7	1132
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a7	8	13'-0	354	8	13'-0	354	8	13'-0	354	8	13'-0	354
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a8	4	52'-8	717	4	52'-8	717	4	52'-8	717	4	52'-8	717
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a9	8	34'-3	932	8	34'-3	932	8	34'-3	932	8	34'-3	932
SLAB LONGITUDINAL BOTTOM, AT RAIL		10a10	4	33'-0	568	4	33'-0	568	4	33'-0	568	4	33'-0	568
SLAB LONGITUDINAL TOP		6b1	39	7'-9	454	39	7'-9	454	39	7'-9	454	39	7'-9	454
SLAB LONGITUDINAL TOP		11b2	39	26'-0	5388	39	26'-0	5388	39	26'-0	5388	39	26'-0	5388
SLAB LONGITUDINAL TOP		11b3	39	31'-9	6579	39	31'-9	6579	39	31'-9	6579	39	31'-9	6579
SLAB LONGITUDINAL TOP		7b4	39	25'-6	2033	39	25'-6	2033	39	25'-6	2033	39	25'-6	2033
SLAB LONGITUDINAL TOP		11b5	40	29'-0	6164	40	29'-0	6164	40	29'-0	6164	40	29'-0	6164
SLAB LONGITUDINAL TOP		6b6	20	34'-4	1032	20	34'-4	1032	20	34'-4	1032	20	34'-4	1032
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	32'-9	394	8	32'-9	394	8	32'-9	394	8	32'-9	394
SLAB LONGITUDINAL TOP, AT RAIL		11b9	8	34'-0	1446	8	34'-0	1446	8	34'-0	1446	8	34'-0	1446
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	25'-6	154	4	25'-6	154	4	25'-6	154	4	25'-6	154
SLAB LONGITUDINAL TOP, AT RAIL		7b11	8	38'-3	626	8	38'-3	626	8	38'-3	626	8	38'-3	626
SLAB LONGITUDINAL TOP, AT RAIL		11b12	8	24'-3	1031	8	24'-3	1031	8	24'-3	1031	8	24'-3	1031
SLAB TRANSVERSE, BOTTOM		6c1	137	32'-10	6757	137	34'-0	6997	124	32'-10	6116	110	32'-10	5425
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	137	32'-10	4692	137	34'-0	4859	124	32'-10	4247	110	32'-10	3767
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	44	8'-3	379	44	8'-3	379	44	8'-3	379	66	8'-3	568
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	272	8'-6	2412	272	8'-6	2412	272	8'-6	2412	270	8'-6	2394
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
** PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					74,676			75,181			75,362			76,235
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					8602			8602			8602			8602
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					9057			9057			9057			9057
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			83,278			83,783			83,964			84,837
		WITH OPEN RAIL			83,733			84,238			84,419			85,292
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			81,756			82,225			82,290			82,717
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			82,211			82,680			82,745			83,172

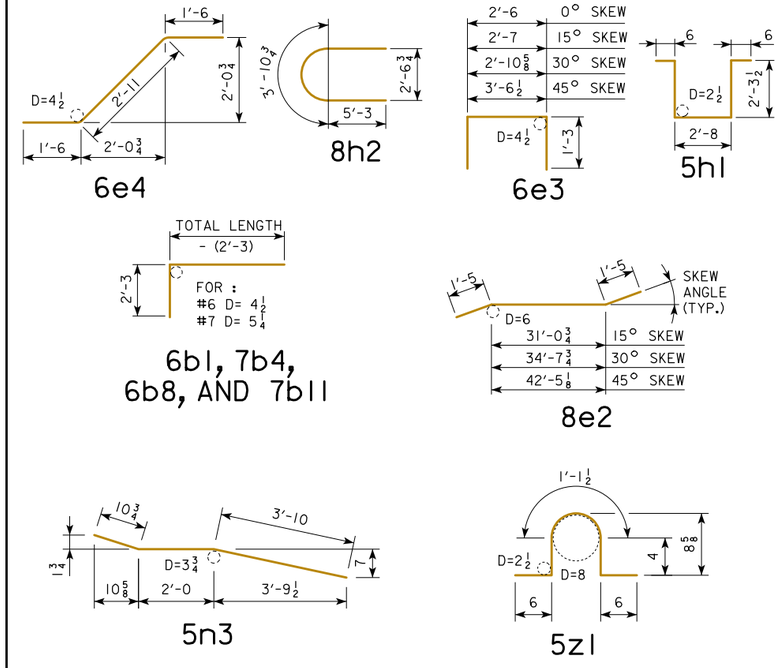
** BARS MAY BE NON-COATED AT CONTRACTOR'S OPTION.

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 140' 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.	347.4	348.1	350.7	356.2	342.8	343.4	345.5	349.8
	REINFORCING STEEL EPOXY COATED LBS.	83,278	83,783	83,964	84,837	81,756	82,225	82,290	82,717
CONCRETE BARRIER OR OPEN RAIL	LIN. FT.	302.0	302.2	302.9	304.5	302.0	302.2	302.9	304.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE) C.Y.	347.2	347.9	350.5	355.9	342.6	343.1	345.2	349.5
	REINFORCING STEEL EPOXY COATED LBS.	83,733	84,238	84,419	85,292	82,211	82,680	82,745	83,172

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

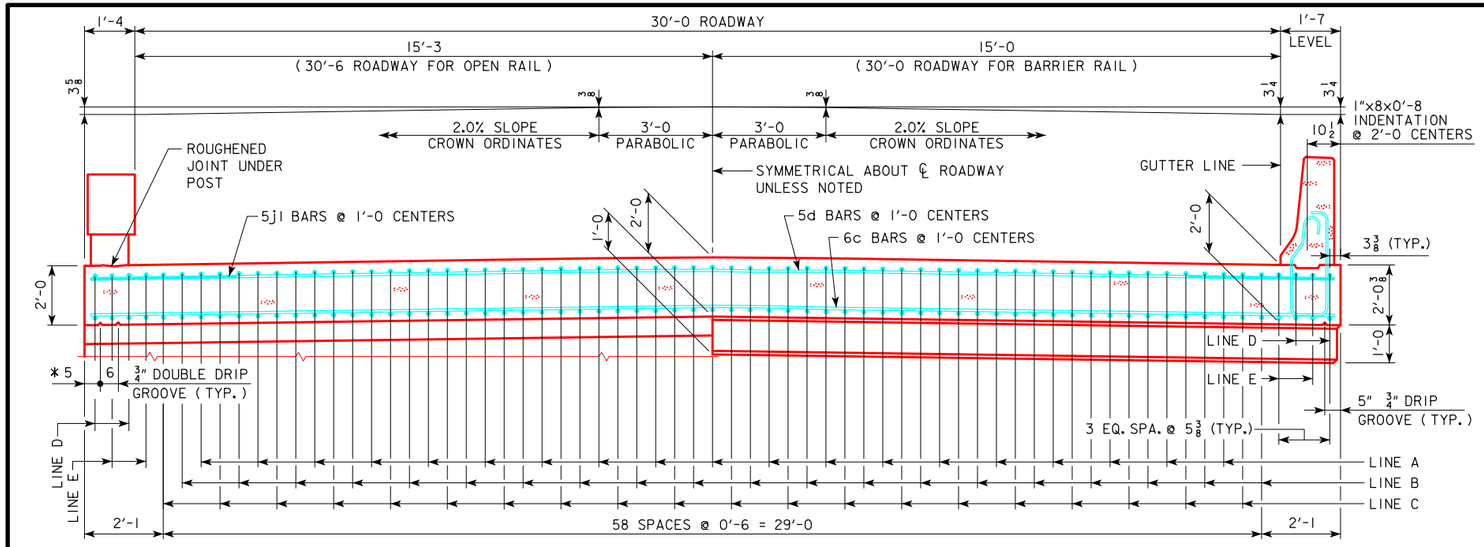
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 140'-0 BRIDGE

EPOXY COATED REINFORCING

J30-17E-06



HALF SECTION NEAR ABUTMENT

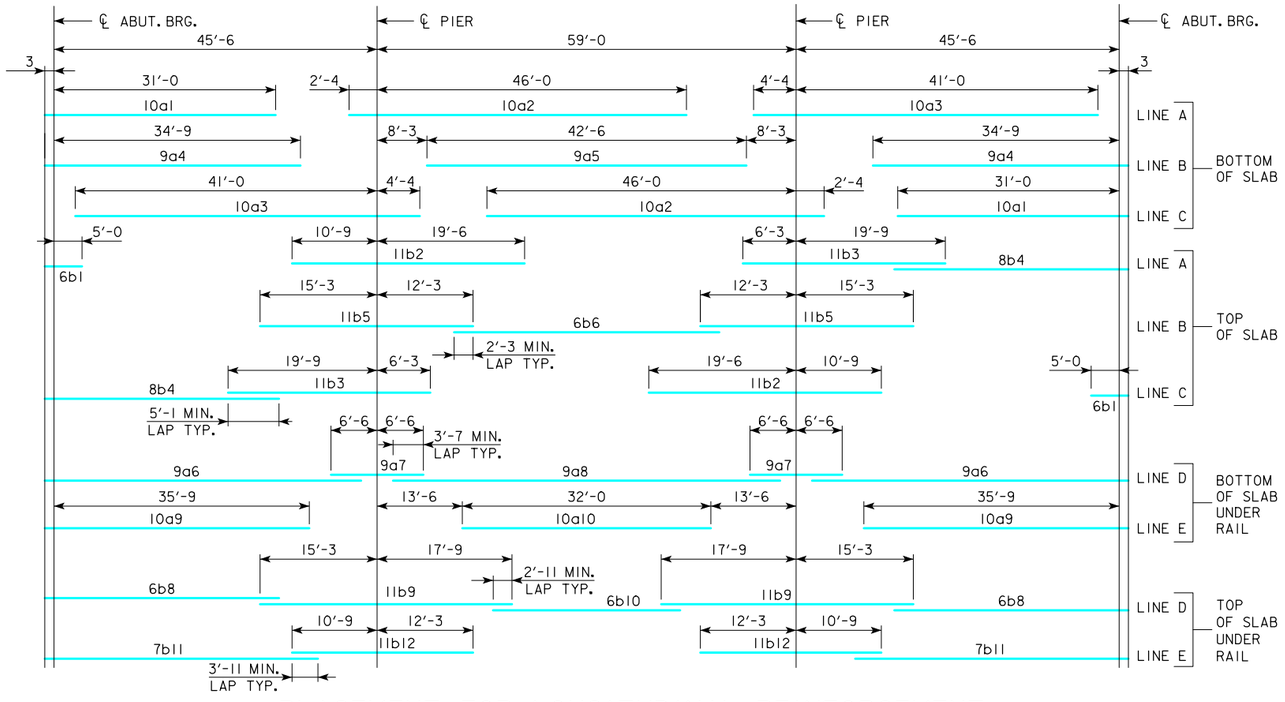
* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 66.34 SQ. FT.

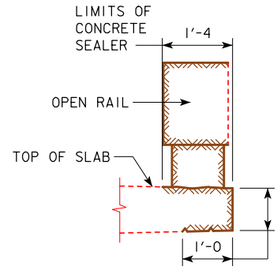
HALF SECTION NEAR PIER

SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 66.39 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.



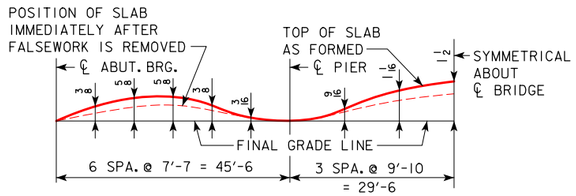
PLACEMENT FOR LONGITUDINAL REINFORCEMENT



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

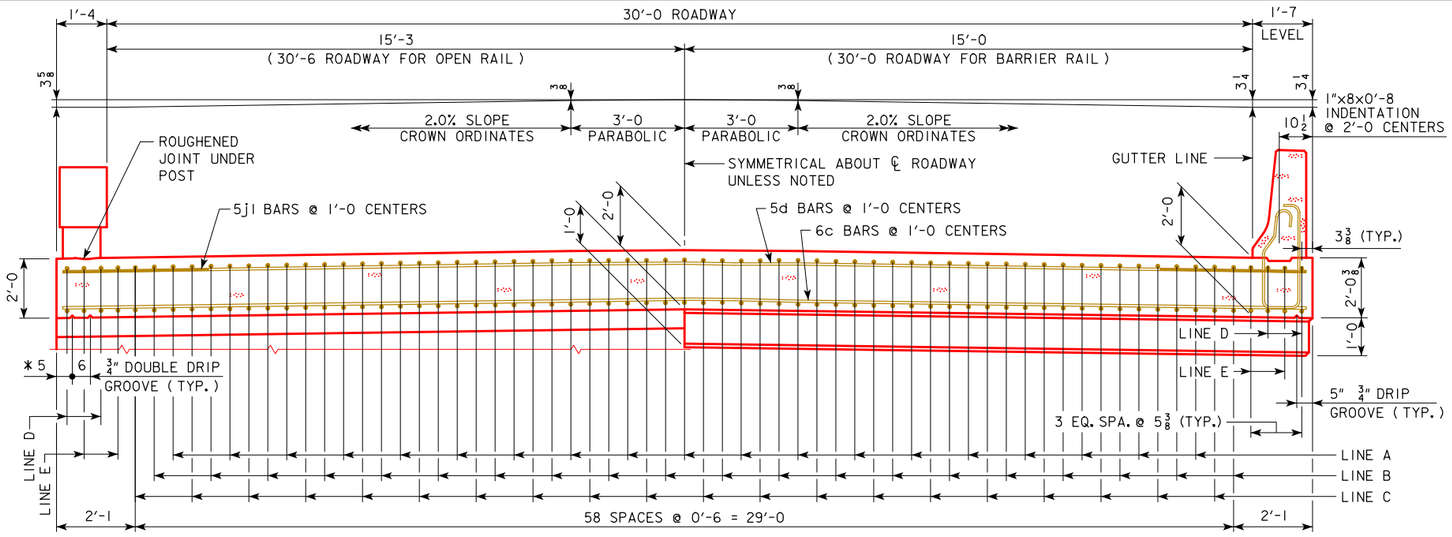
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 150'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-18B-06



HALF SECTION NEAR ABUTMENT

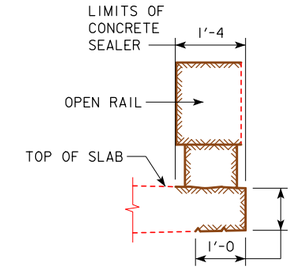
HALF SECTION NEAR PIER

* NOTE: DOUBLE DRIP GROOVES FOR OPEN RAIL OPTION ONLY.

SLAB CROSS-SECTIONAL AREA FOR OPEN RAIL = 66.33 SQ. FT.

NOTE: TOP LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF SLAB. BOTTOM LONGITUDINAL REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF SLAB. REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED ON BAR CHAIRS BEFORE CONCRETE IS POURED. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS.

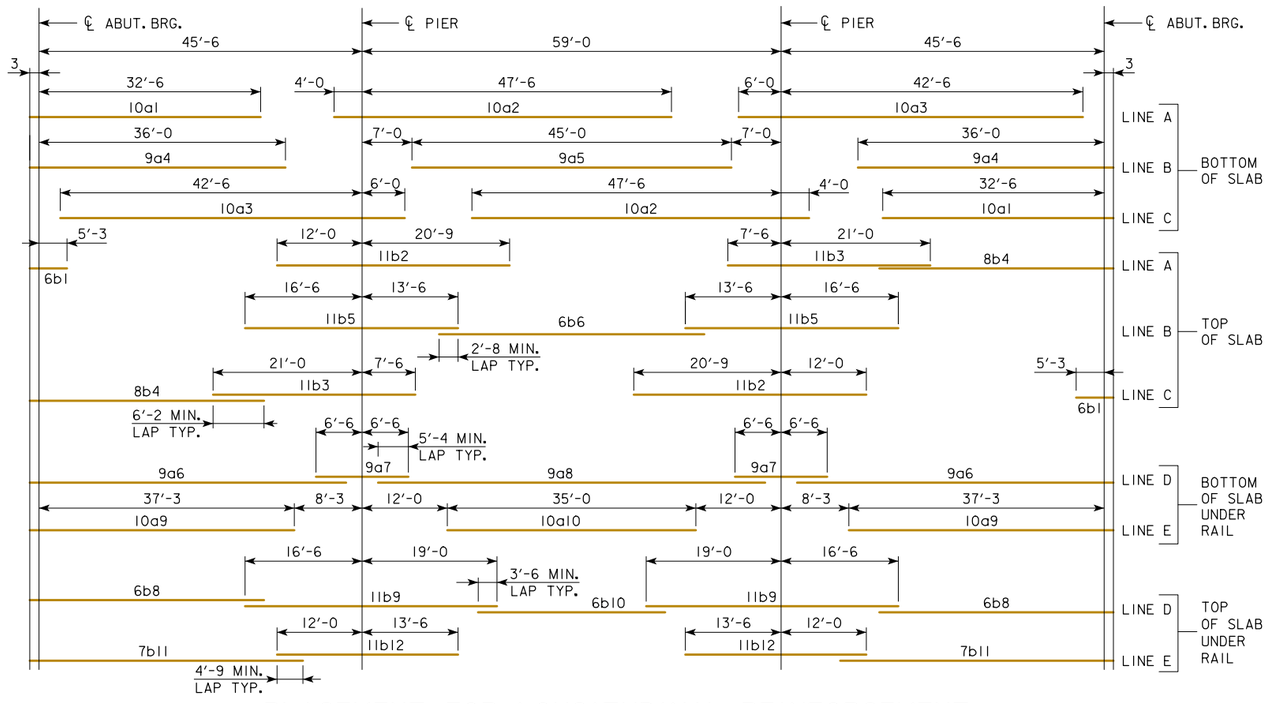
SLAB CROSS-SECTIONAL AREA FOR BARRIER RAIL = 66.38 SQ. FT.



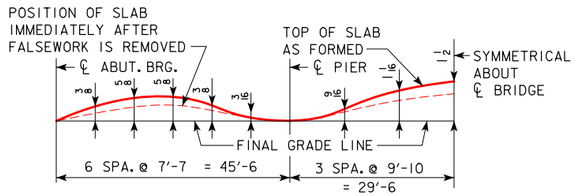
CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER THE SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS.



PLACEMENT FOR LONGITUDINAL REINFORCEMENT



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 150'-0 BRIDGE

EPOXY COATED REINFORCING

J30-18E-06

REVISED 07-2016: DATE ON SHEET CHANGED TO CORRECT CLERICAL ERROR.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 150' BRIDGE

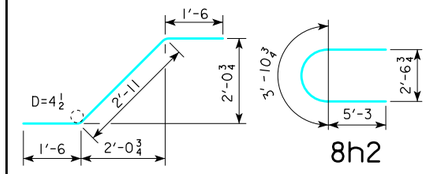
LOCATION \ SKEW	SHAPE	BAR	0° NO.	0° LENGTH	0° WEIGHT	15° NO.	15° LENGTH	15° WEIGHT	30° NO.	30° LENGTH	30° WEIGHT	45° NO.	45° LENGTH	45° WEIGHT
SLAB LONGITUDINAL BOTTOM		10a1	39	31'-3	5245	39	31'-3	5245	39	31'-3	5245	39	31'-3	5245
SLAB LONGITUDINAL BOTTOM		10a2	39	48'-4	8112	39	48'-4	8112	39	48'-4	8112	39	48'-4	8112
SLAB LONGITUDINAL BOTTOM		10a3	39	45'-4	7608	39	45'-4	7608	39	45'-4	7608	39	45'-4	7608
SLAB LONGITUDINAL BOTTOM		9a4	40	35'-0	4760	40	35'-0	4760	40	35'-0	4760	40	35'-0	4760
SLAB LONGITUDINAL BOTTOM		9a5	20	42'-6	2890	20	42'-6	2890	20	42'-6	2890	20	42'-6	2890
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a6	8	42'-10	1166	8	42'-10	1166	8	42'-10	1166	8	42'-10	1166
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a7	8	13'-0	354	8	13'-0	354	8	13'-0	354	8	13'-0	354
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a8	4	53'-2	724	4	53'-2	724	4	53'-2	724	4	53'-2	724
SLAB LONGITUDINAL BOTTOM, AT RAIL		10a9	8	36'-0	1240	8	36'-0	1240	8	36'-0	1240	8	36'-0	1240
SLAB LONGITUDINAL BOTTOM, AT RAIL		10a10	4	32'-0	551	4	32'-0	551	4	32'-0	551	4	32'-0	551
SLAB LONGITUDINAL TOP		6b1	39	7'-6	440	39	7'-6	440	39	7'-6	440	39	7'-6	440
SLAB LONGITUDINAL TOP		11b2	39	30'-3	6269	39	30'-3	6269	39	30'-3	6269	39	30'-3	6269
SLAB LONGITUDINAL TOP		11b3	39	26'-0	5388	39	26'-0	5388	39	26'-0	5388	39	26'-0	5388
SLAB LONGITUDINAL TOP		8b4	39	33'-4	3471	39	33'-4	3471	39	33'-4	3471	39	33'-4	3471
SLAB LONGITUDINAL TOP		11b5	40	27'-6	5845	40	27'-6	5845	40	27'-6	5845	40	27'-6	5845
SLAB LONGITUDINAL TOP		6b6	20	39'-0	1172	20	39'-0	1172	20	39'-0	1172	20	39'-0	1172
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	35'-8	429	8	35'-8	429	8	35'-8	429	8	35'-8	429
SLAB LONGITUDINAL TOP, AT RAIL		11b9	8	33'-0	1403	8	33'-0	1403	8	33'-0	1403	8	33'-0	1403
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	29'-4	177	4	29'-4	177	4	29'-4	177	4	29'-4	177
SLAB LONGITUDINAL TOP, AT RAIL		7b11	8	41'-2	674	8	41'-2	674	8	41'-2	674	8	41'-2	674
SLAB LONGITUDINAL TOP, AT RAIL		11b12	8	23'-0	978	8	23'-0	978	8	23'-0	978	8	23'-0	978
SLAB TRANSVERSE, BOTTOM		6c1	147	32'-10	7250	147	34'-0	7507	134	32'-10	6609	120	32'-10	5918
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	147	32'-10	5035	147	34'-0	5213	134	32'-10	4589	120	32'-10	4110
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	44	8'-6	391	44	8'-6	391	44	8'-6	391	66	8'-6	586
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	292	8'-6	2589	292	8'-6	2589	292	8'-6	2589	290	8'-6	2571
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					78,614			79,147			79,299			80,179
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					9161			9161			9161			9161
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					9605			9605			9605			9605
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			87,775			88,308			88,460			89,340
		WITH OPEN RAIL			88,219			88,752			88,904			89,784
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			86,241			86,738			86,774			87,202
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			86,685			87,182			87,218			87,646

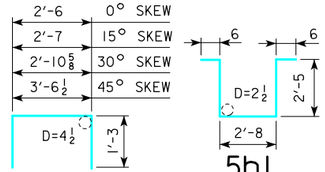
ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 150' BRIDGE

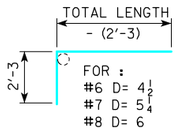
ITEM		SKEW	WITH MONOLITHIC PIER CAP 0°	15°	30°	45°	WITH NON-MONOLITHIC PIER CAP 0°	15°	30°	45°
WITH BARRIER RAIL	*STRUCTURAL CONCRETE (BRIDGE)	C.Y.	393.1	393.8	396.3	401.6	388.5	389.0	391.0	395.2
	REINFORCING STEEL	LBS.	87,775	88,308	88,460	89,340	86,241	86,738	86,774	87,202
CONCRETE BARRIER OR OPEN RAIL		LIN. FT.	322.0	322.2	322.9	324.5	322.0	322.2	322.9	324.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE)	C.Y.	392.8	393.5	396.0	401.3	388.2	388.7	390.8	394.9
	REINFORCING STEEL	LBS.	88,219	88,752	88,904	89,784	86,685	87,182	87,218	87,646

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

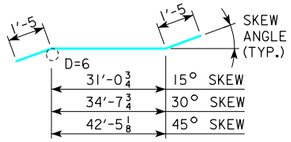
BENT BAR DETAILS

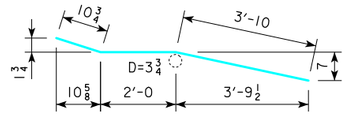


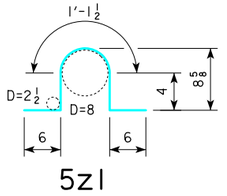




6b1, 8b4,
6b8, AND 7b11







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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 150'-0 BRIDGE

NON-EPOXY COATED REINFORCING

J30-19B-06

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 150' 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		10a1	39	32'-9	5497	39	32'-9	5497	39	32'-9	5497	39	32'-9	5497
SLAB LONGITUDINAL BOTTOM		10a2	39	51'-6	8643	39	51'-6	8643	39	51'-6	8643	39	51'-6	8643
SLAB LONGITUDINAL BOTTOM		10a3	39	48'-6	8140	39	48'-6	8140	39	48'-6	8140	39	48'-6	8140
SLAB LONGITUDINAL BOTTOM		9a4	40	36'-3	4930	40	36'-3	4930	40	36'-3	4930	40	36'-3	4930
SLAB LONGITUDINAL BOTTOM		9a5	20	45'-0	3060	20	45'-0	3060	20	45'-0	3060	20	45'-0	3060
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a6	8	44'-7	1213	8	44'-7	1213	8	44'-7	1213	8	44'-7	1213
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a7	8	13'-0	354	8	13'-0	354	8	13'-0	354	8	13'-0	354
SLAB LONGITUDINAL BOTTOM, AT RAIL		9a8	4	56'-8	771	4	56'-8	771	4	56'-8	771	4	56'-8	771
SLAB LONGITUDINAL BOTTOM, AT RAIL		10a9	8	37'-6	1291	8	37'-6	1291	8	37'-6	1291	8	37'-6	1291
SLAB LONGITUDINAL BOTTOM, AT RAIL		10a10	4	35'-0	603	4	35'-0	603	4	35'-0	603	4	35'-0	603
SLAB LONGITUDINAL TOP		6b1	39	7'-9	454	39	7'-9	454	39	7'-9	454	39	7'-9	454
SLAB LONGITUDINAL TOP		11b2	39	32'-9	6787	39	32'-9	6787	39	32'-9	6787	39	32'-9	6787
SLAB LONGITUDINAL TOP		11b3	39	28'-6	5906	39	28'-6	5906	39	28'-6	5906	39	28'-6	5906
SLAB LONGITUDINAL TOP		8b4	39	33'-2	3454	39	33'-2	3454	39	33'-2	3454	39	33'-2	3454
SLAB LONGITUDINAL TOP		11b5	40	30'-0	6376	40	30'-0	6376	40	30'-0	6376	40	30'-0	6376
SLAB LONGITUDINAL TOP		6b6	20	37'-4	1122	20	37'-4	1122	20	37'-4	1122	20	37'-4	1122
SLAB LONGITUDINAL TOP, AT RAIL		6b8	8	35'-0	421	8	35'-0	421	8	35'-0	421	8	35'-0	421
SLAB LONGITUDINAL TOP, AT RAIL		11b9	8	35'-6	1509	8	35'-6	1509	8	35'-6	1509	8	35'-6	1509
SLAB LONGITUDINAL TOP, AT RAIL		6b10	4	28'-0	169	4	28'-0	169	4	28'-0	169	4	28'-0	169
SLAB LONGITUDINAL TOP, AT RAIL		7b11	8	40'-9	667	8	40'-9	667	8	40'-9	667	8	40'-9	667
SLAB LONGITUDINAL TOP, AT RAIL		11b12	8	25'-6	1084	8	25'-6	1084	8	25'-6	1084	8	25'-6	1084
SLAB TRANSVERSE, BOTTOM		6c1	147	32'-10	7250	147	34'-0	7507	134	32'-10	6609	120	32'-10	5918
SLAB TRANSVERSE ENDS, BOTTOM		6c2	-	-	-	-	-	-	30	VARIES	797	56	VARIES	1486
SLAB TRANSVERSE, TOP		5d1	147	32'-10	5035	147	34'-0	5213	134	32'-10	4589	120	32'-10	4110
SLAB TRANSVERSE ENDS, TOP		5d2	-	-	-	-	-	-	30	VARIES	553	56	VARIES	1032
SLAB, TRANSVERSE AT ABUTMENT		8e1	18	32'-10	1578	-	-	-	-	-	-	-	-	-
SLAB, TRANSVERSE AT ABUTMENT		8e2	-	-	-	18	33'-11	1631	18	37'-6	1803	18	45'-4	2179
SLAB, HAIRPINS, AT ABUTMENT		6e3	72	5'-0	541	72	5'-1	550	72	5'-5	586	72	6'-1	658
SLAB, DIAGONALS, AT ABUTMENT		6e4	72	5'-11	640	72	5'-11	640	72	5'-11	640	72	5'-11	640
PIER CAP HOOPS		5h1	44	8'-6	391	44	8'-6	391	44	8'-6	391	66	8'-6	586
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	292	8'-6	2589	292	8'-6	2589	292	8'-6	2589	290	8'-6	2571
WING, VERTICAL		5m1	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185
WING, HORIZONTAL BACK FACE		5n1	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167
WING, HORIZONTAL TRAFFIC FACE		5n3	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169
** PAVING BLOCK LIFTING HOOPS		5z1	10	2'-10	30	10	2'-10	30	10	2'-10	30	10	2'-10	30
SUB TOTAL - LBS.					82,169			82,702			82,854			83,734
BARRIER RAIL - SEE LIST ON RAIL SHEET J30-41-06					9161			9161			9161			9161
OPEN RAIL - SEE LIST ON RAIL SHEET J30-44-06					9605			9605			9605			9605
TOTAL - LBS. WITH MONOLITHIC PIER CAP		WITH BARRIER RAIL			91,330			91,863			92,015			92,895
		WITH OPEN RAIL			91,774			92,307			92,459			93,339
TOTAL - LBS. WITH NON-MONOLITHIC PIER CAP		WITH BARRIER RAIL			89,796			90,293			90,329			90,757
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED		WITH OPEN RAIL			90,240			90,737			90,773			91,201

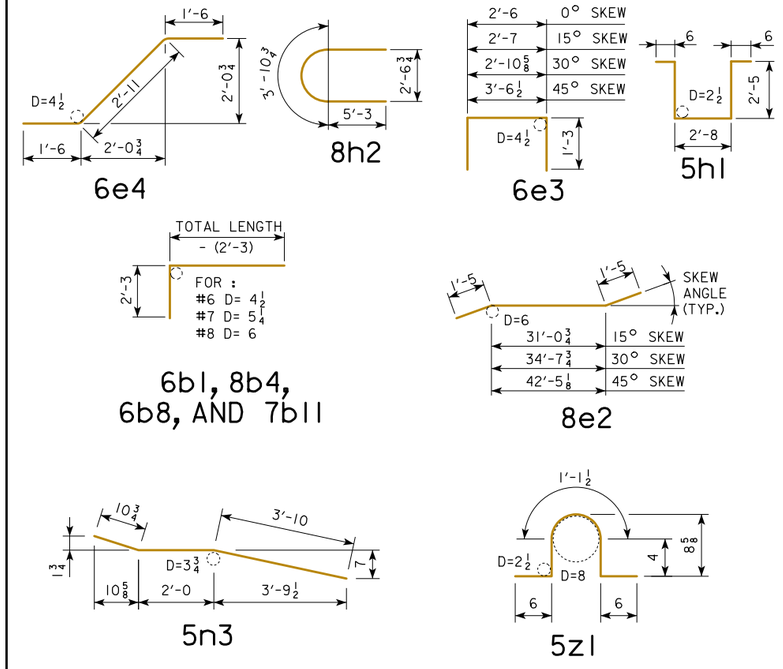
** BARS MAY BE NON-COATED AT CONTRACTOR'S OPTION.

ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 150' 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.	393.1	393.8	396.3	401.6	388.5	389.0	391.0	395.2
	REINFORCING STEEL EPOXY COATED LBS.	91,330	91,863	92,015	92,895	89,796	90,293	90,329	90,757
CONCRETE BARRIER OR OPEN RAIL	LIN. FT.	322.0	322.2	322.9	324.5	322.0	322.2	322.9	324.5
WITH OPEN RAIL	*STRUCTURAL CONCRETE (BRIDGE) C.Y.	392.8	393.5	396.0	401.3	388.2	388.7	390.8	394.9
	REINFORCING STEEL EPOXY COATED LBS.	91,774	92,307	92,459	93,339	90,240	90,737	90,773	91,201

* INCLUDES 4 WINGS @ 0.68 C.Y. EACH AND 2 TEMPORARY PAVING BLOCKS; EXCLUDES RAIL CONCRETE.

BENT BAR DETAILS



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

REVISED 07-2009: OPEN RAIL REINF. QTYS. CHANGED WHICH CHANGED TOTAL REINF. QTYS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK. (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

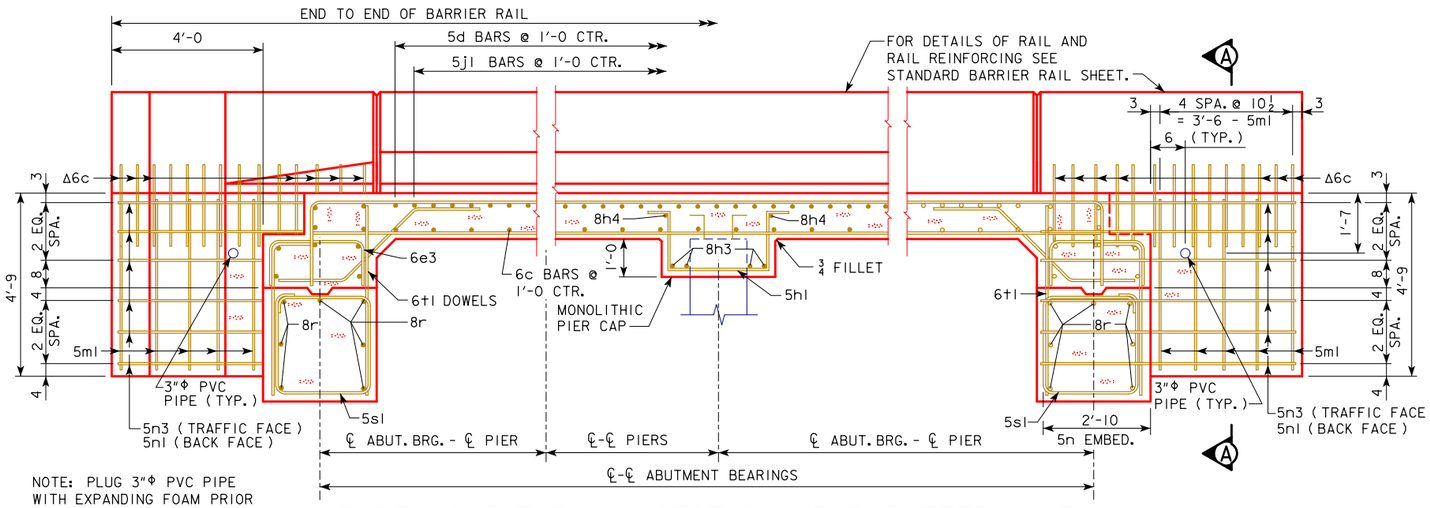
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS 150'-0 BRIDGE

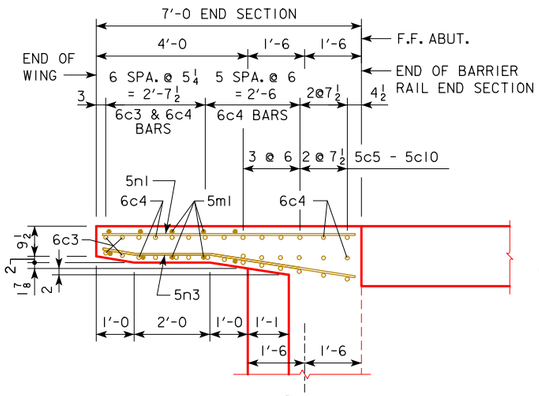
EPOXY COATED REINFORCING

J30-19E-06

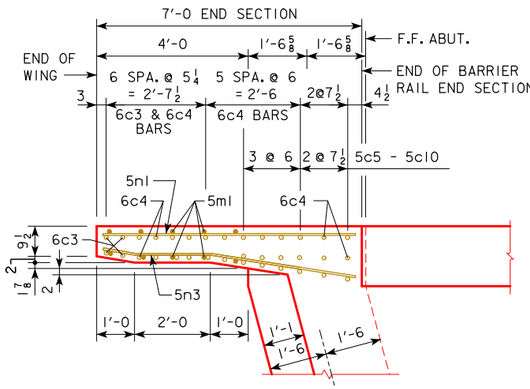


NOTE: PLUG 3"Φ PVC PIPE WITH EXPANDING FOAM PRIOR TO BACKFILLING BEHIND ABUTMENTS.

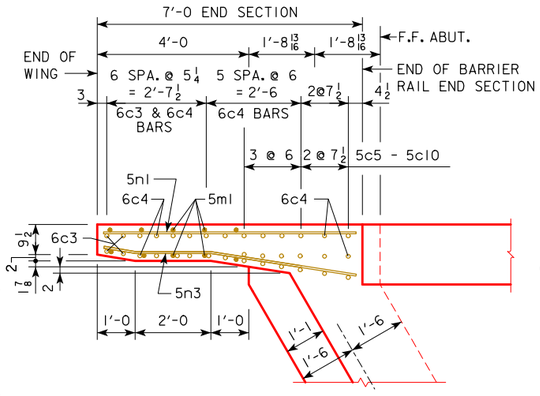
PART LONGITUDINAL SECTION NEAR GUTTER LINE



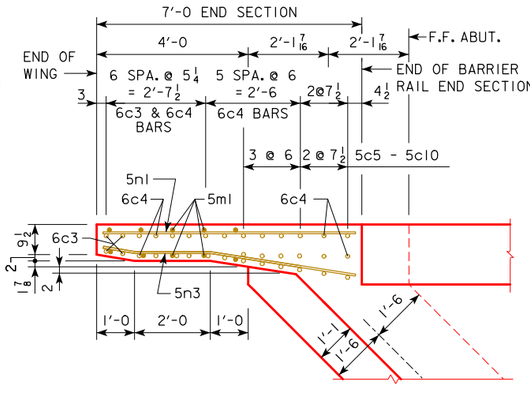
PART PLAN 0° SKEW
(RAILING NOT SHOWN)



PART PLAN 15° SKEW
(RAILING NOT SHOWN)

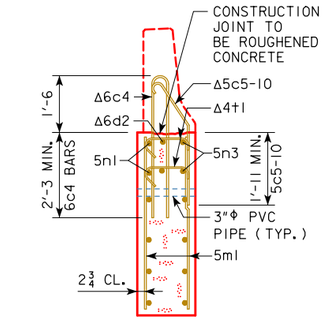


PART PLAN 30° SKEW
(RAILING NOT SHOWN)



PART PLAN 45° SKEW
(RAILING NOT SHOWN)

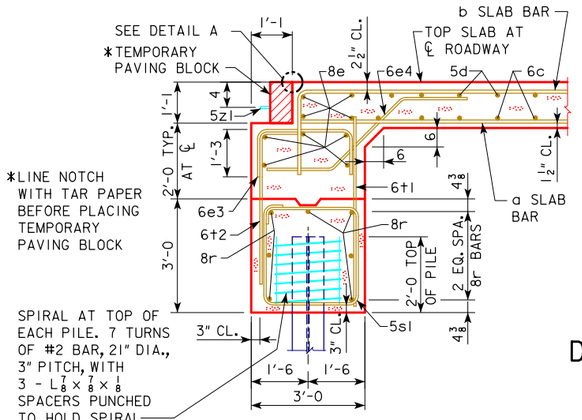
NOTE: REINFORCING LAYOUT IN PART PLANS 0°, 15°, 30° & 45° SKEWS ARE FOR BARRIER RAIL ONLY. SEE SHEET J30-43-06 FOR OPEN RAIL.



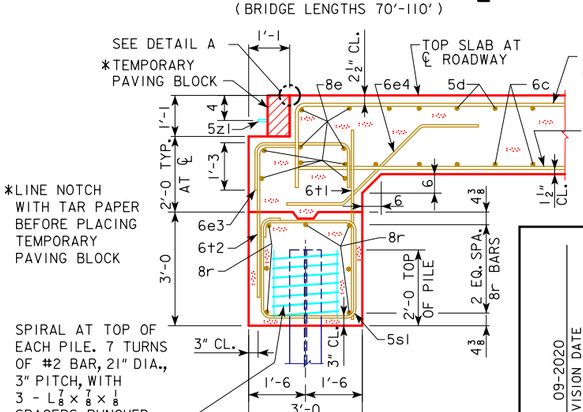
SECTION A-A

Δ NOTE: SEE END SECTION DETAILS IN THESE PLANS FOR DETAILS OF BARRIER RAIL END SECTION. REINFORCING BARS 6c3, 6c4, 5c5-10, 6d2 & 4t1 ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES.

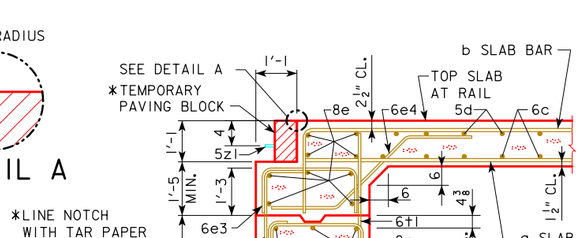
NOTE: 5ml, 5n1 & 5n3 BARS ARE INCLUDED IN SUPERSTRUCTURE BAR LIST. 5c, 6c, 6d & 4t1 BARS ARE INCLUDED IN BARRIER RAIL BAR LIST.



SECTION NORMAL TO ABUTMENT AT ℄
(BRIDGE LENGTHS 70'-110')



SECTION NORMAL TO ABUTMENT AT ℄
(BRIDGE LENGTHS 120'-150')



DETAIL A

SECTION NORMAL TO ABUTMENT AT GUTTERLINE

SUPERSTRUCTURE NOTES:

THIS BRIDGE IS DESIGNED FOR HL-93 LOADING PLUS AN ALLOWANCE OF 20 POUNDS PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

THE SLAB AS SHOWN INCLUDES A ½ INCH INTEGRAL WEARING SURFACE.

THE MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN. ALL REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE. SEE "BAR CHAIR NOTE".

ALL REINFORCING SHALL BE GRADE 60.

THE CONCRETE SLAB IS TO BE PLACED WITH A MINIMUM OF CONSTRUCTION JOINTS. PROCEDURES FOR PLACING SLAB CONCRETE SHALL 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 RESULT. SLAB FALSEWORK SHALL BE REMOVED PRIOR TO CONSTRUCTION OF THE BARRIER RAILS, UNLESS SLAB CONSTRUCTION IS STAGED.

NOTE THAT WHEN PORTLAND CEMENT APPROACH PAVEMENT IS PLACED, COMPRESSIBLE JOINT MATERIAL MUST BE USED BETWEEN PAVEMENT AND END OF BRIDGE.

COST OF FURNISHING AND PLACING 3"Φ PVC PIPE IN EACH WING IS INCLUDED IN THE PRICE BID FOR STRUCTURAL CONCRETE.

BAR CHAIR NOTE:

TOP MAT OF REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'-0 CENTERS LONGITUDINALLY AND TRANSVERSELY. THE BOTTOM MAT OF REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'-0 CENTERS LONGITUDINALLY AND TRANSVERSELY, OR BY CONTINUOUS ROWS OF BAR HIGH CHAIRS OR SLAB BOLSTERS SPACED 4'-0 APART. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND SLAB BOLSTERS.

REVISED 06-2012: I.M. REQUIREMENT ADDED TO BAR CHAIR NOTE.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. REVISED SUPERSTRUCTURE NOTES TO STATE; "SLAB FALSEWORK SHALL BE REMOVED PRIOR TO CONSTRUCTION OF THE BARRIER RAILS, UNLESS SLAB CONSTRUCTION IS STAGED." CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

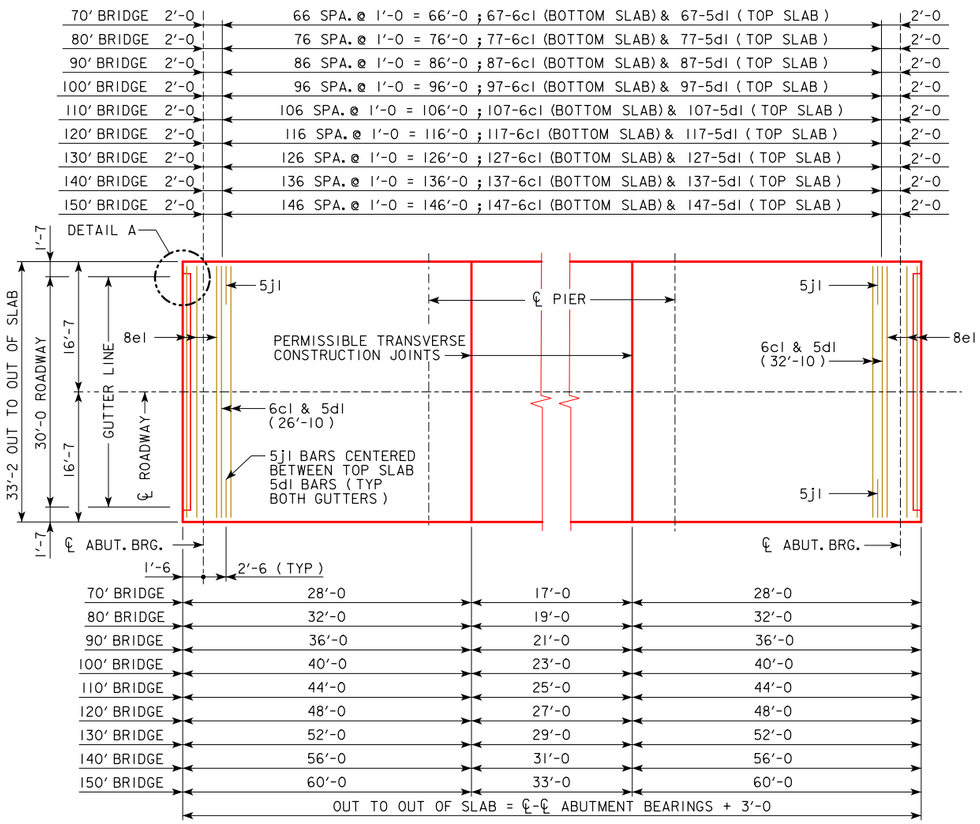
NOVEMBER, 2006

SUPERSTRUCTURE DETAILS ALL BRIDGES

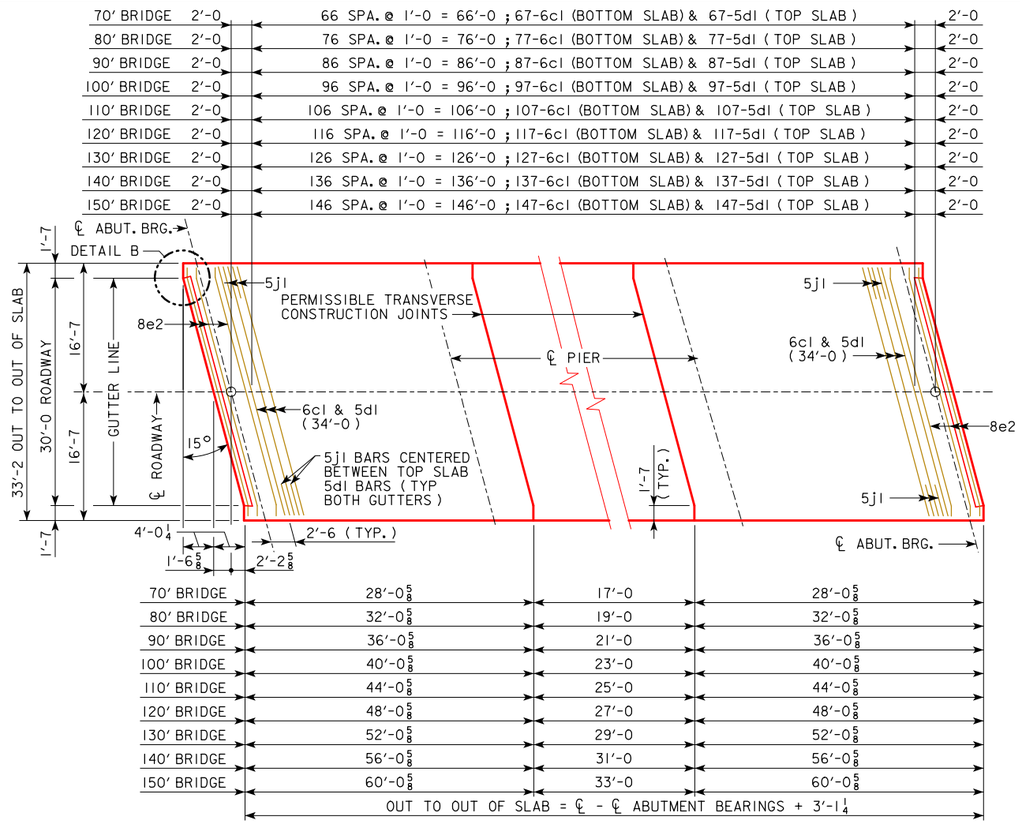
J30-20-06

09-2020 LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

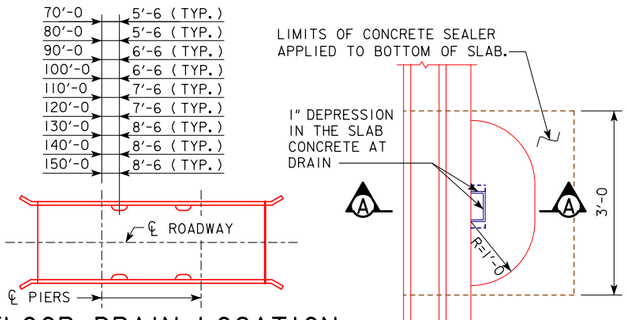


0° SKEW



15° SKEW

TRANSVERSE REINFORCING STEEL LAYOUT



FLOOR DRAIN LOCATION

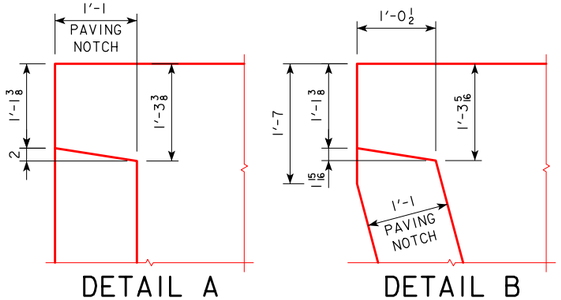
NOTE: 4" × 8" OUTSIDE DIMENSION ROLLED TUBE WITH 1/4" WALL THICKNESS MAY BE SUBSTITUTED FOR THE WELDED DRAIN SHOWN.

PART PLAN

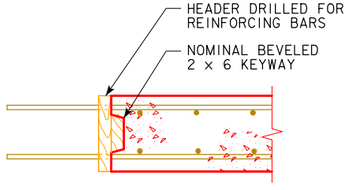
FLOOR DRAIN DETAILS

(USE FOR BARRIER RAIL ONLY, NOT REQUIRED FOR OPEN RAIL)

NOTE: DRAINS ARE TO BE GALVANIZED. INCLUDE COST OF DRAINS IN PRICE BID FOR "STRUCTURAL CONCRETE". 4 DRAINS REQUIRED.

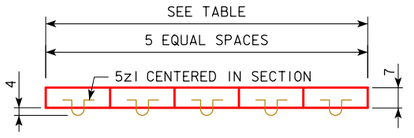


DETAIL A DETAIL B



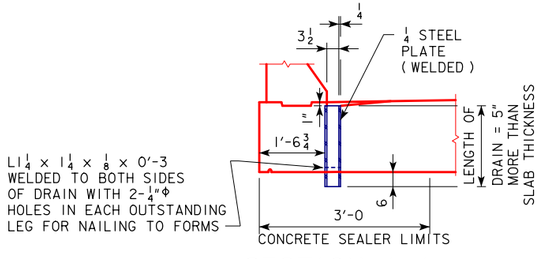
TRANSVERSE CONSTRUCTION JOINT

TEMPORARY PAVING BLOCK		
SKEW	LENGTH	CONCRETE
0°	28'-0	0.7 C.Y.
15°	29'-0	0.7 C.Y.



TEMPORARY PAVING BLOCK DETAIL

NOTE: TEMPORARY PAVING BLOCK TO BE USED WITH PAVED APPROACHES ONLY. LINE NOTCH WITH TAR PAPER BEFORE PLACING TEMPORARY PAVING BLOCK.



SECTION A-A

WEIGHT OF ONE FLOOR DRAIN			
SPAN	WEIGHT, LBS.	SPAN	WEIGHT, LBS.
70'-0	32	120'-0	41
80'-0	33	130'-0	43
90'-0	35	140'-0	45
100'-0	37	150'-0	48
110'-0	39		

09-2020 LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

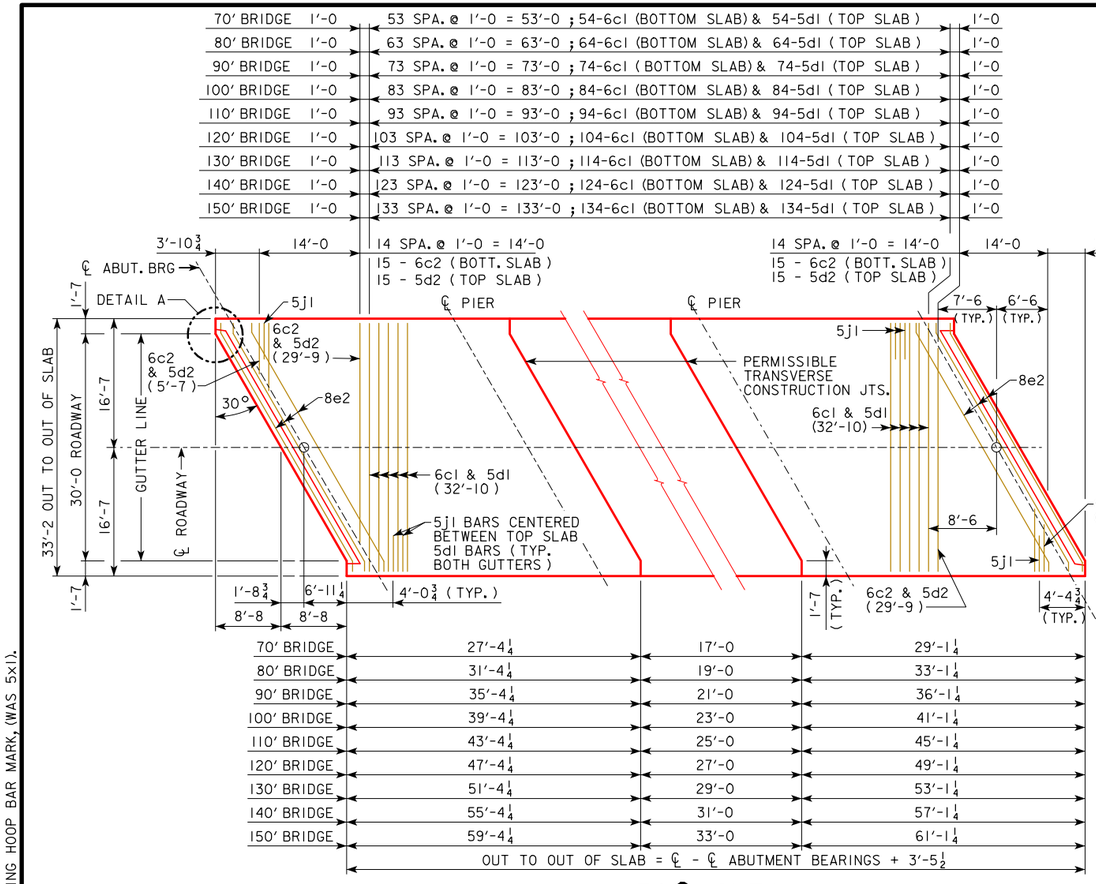
SUPERSTRUCTURE DETAILS ALL BRIDGES

0° & 15° SKEW

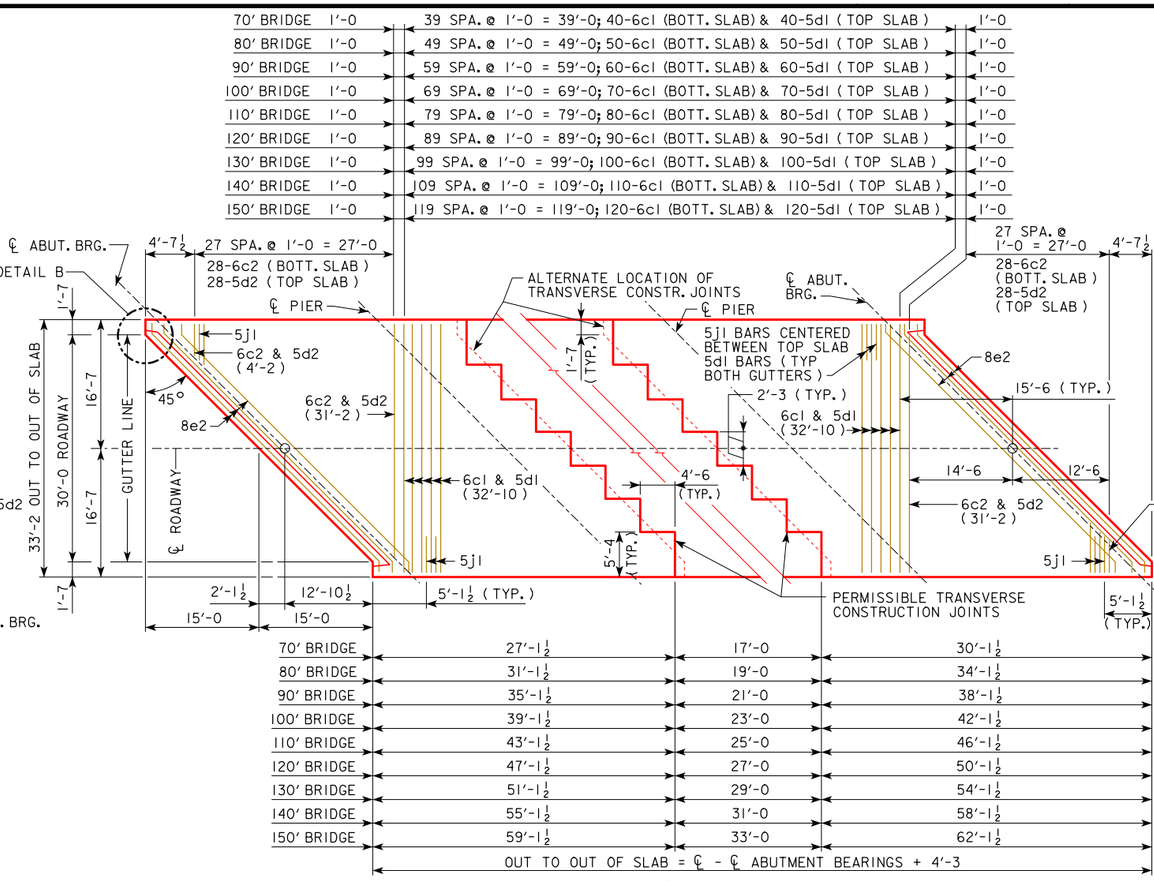
J30-21-06

REVISED 07-2009: CHANGED THE DRAIN ANGLES DETAILS ON SECTION A-A.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).

REVISED 07-2009: CHANGED THE DRAIN ANGLES DETAILS ON SECTION A-A.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).



30° SKEW

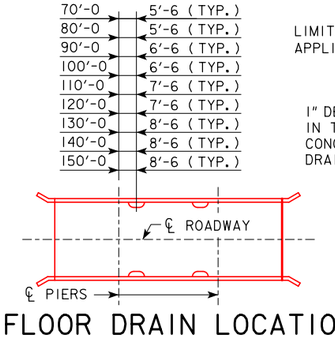


45° SKEW

TRANSVERSE REINFORCING STEEL LAYOUT

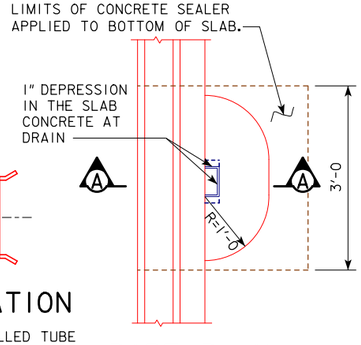
NOTE: 5d2 BARS ARE TO PASS UNDER 8e2 BARS IN CONFLICT AREAS ON 30° & 45° SKEW BRIDGES.

TEMPORARY PAVING BLOCK		
SKEW	LENGTH	CONCRETE
30°	32'-7	0.8 C.Y.
45°	40'-5	0.9 C.Y.



FLOOR DRAIN LOCATION

NOTE: 4" x 8" OUTSIDE DIMENSION ROLLED TUBE WITH ¼" WALL THICKNESS MAY BE SUBSTITUTED FOR THE WELDED DRAIN SHOWN.

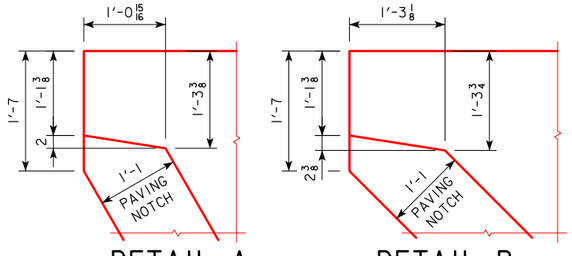


PART PLAN

FLOOR DRAIN DETAILS

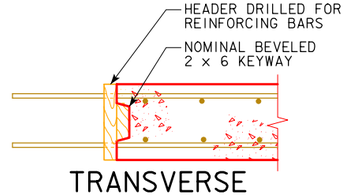
(USE FOR BARRIER RAIL ONLY, NOT REQUIRED FOR OPEN RAIL)

NOTE: DRAINS ARE TO BE GALVANIZED. INCLUDE COST OF DRAINS IN PRICE BID FOR "STRUCTURAL CONCRETE". 4 DRAINS REQUIRED.

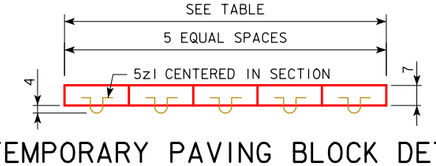


DETAIL A

DETAIL B

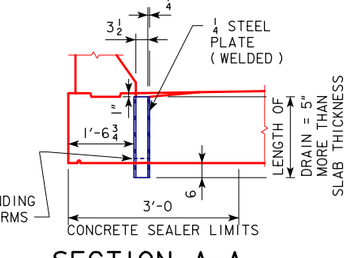


TRANSVERSE CONSTRUCTION JOINT



TEMPORARY PAVING BLOCK DETAIL

NOTE: TEMPORARY PAVING BLOCK TO BE USED WITH PAVED APPROACHES ONLY. LINE NOTCH WITH TAR PAPER BEFORE PLACING TEMPORARY PAVING BLOCK.



SECTION A-A

WEIGHT OF ONE FLOOR DRAIN			
SPAN	WEIGHT, LBS.	SPAN	WEIGHT, LBS.
70'-0	32	120'-0	41
80'-0	33	130'-0	43
90'-0	35	140'-0	45
100'-0	37	150'-0	48
110'-0	39		

09-2020 LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

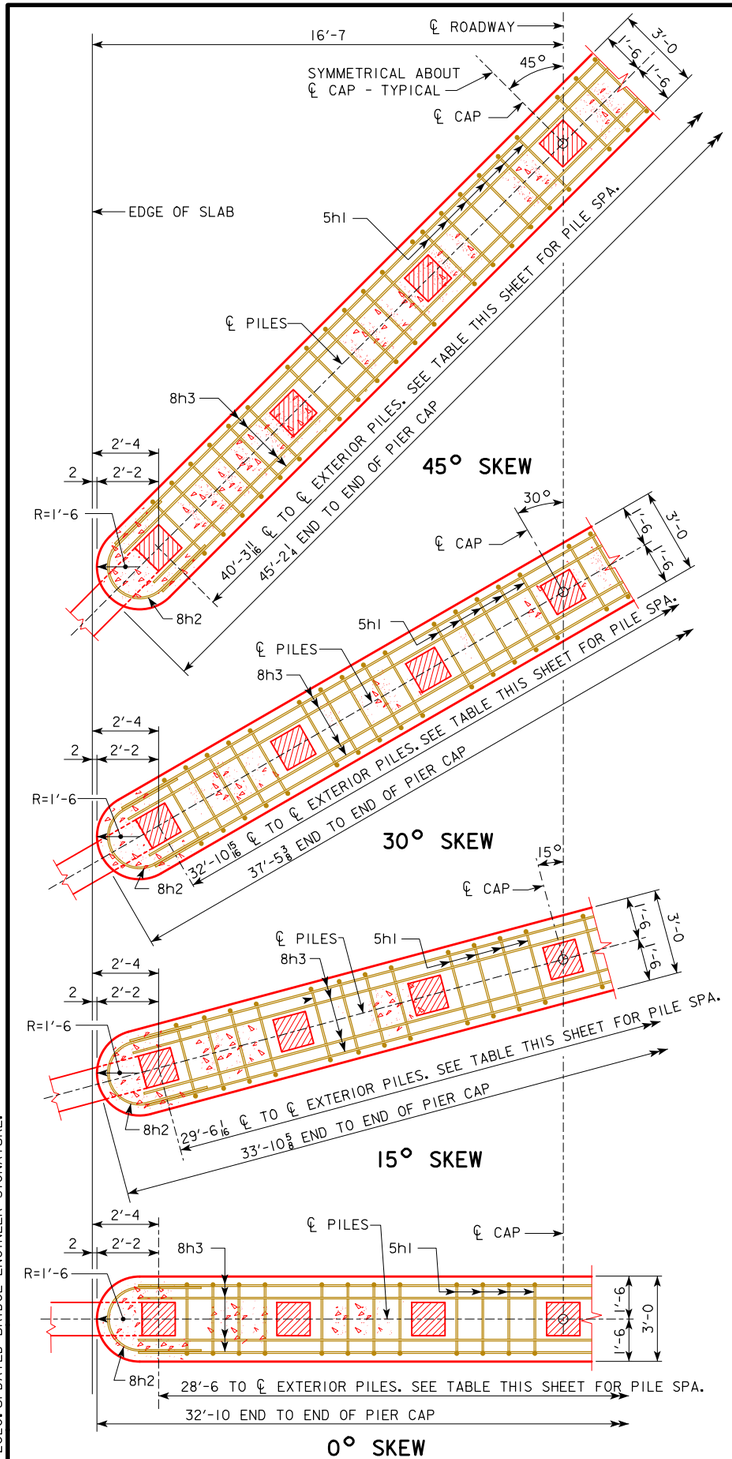
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

SUPERSTRUCTURE DETAILS ALL BRIDGES

30° & 45° SKEW

J30-22-06



HALF SECTION BELOW SLAB

NOTE: NUMBER OF PILES AND STIRRUPS SHOWN ARE FOR A 70'-0 BRIDGE. CAP DIMENSIONS ARE TYPICAL FOR ALL BRIDGES.

TYPICAL NUMBERS OF PILES AND SPACINGS AND FACTORED PIER LOADS

	BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
①	TYP. NO. OF PILES	7	7	8	9	10	11	12	12	12
	TYP. PILE SPACES @ 0°	6 SPA. @ 4'-9	6 SPA. @ 4'-9	7 SPA. @ ABOUT 4'-1(-)	8 SPA. @ ABOUT 3'-7(-)	② 9 SPA. @ 3'-2	③ 10 SPA. @ ABOUT 2'-10(+)	③ 11 SPA. @ ABOUT 2'-7(+)	③ 11 SPA. @ ABOUT 2'-7(+)	③ 11 SPA. @ ABOUT 2'-7(+)
	TYP. PILE SPACES @ 15°	6 SPA. @ ABOUT 4'-11(+)	6 SPA. @ ABOUT 4'-11(+)	7 SPA. @ ABOUT 4'-3(-)	8 SPA. @ ABOUT 3'-8(+)	② 9 SPA. @ ABOUT 3'-3(+)	② 10 SPA. @ ABOUT 2'-11(+)	③ 11 SPA. @ ABOUT 2'-8(+)	③ 11 SPA. @ ABOUT 2'-8(+)	③ 11 SPA. @ ABOUT 2'-8(+)
	TYP. PILE SPACES @ 30°	6 SPA. @ ABOUT 5'-6(-)	6 SPA. @ ABOUT 5'-6(-)	7 SPA. @ ABOUT 4'-8(+)	8 SPA. @ ABOUT 4'-1(+)	9 SPA. @ ABOUT 3'-8(-)	② 10 SPA. @ ABOUT 3'-3(+)	② 11 SPA. @ ABOUT 3'-0(-)	② 11 SPA. @ ABOUT 3'-0(-)	② 11 SPA. @ ABOUT 3'-0(-)
	TYP. PILE SPACES @ 45°	6 SPA. @ ABOUT 6'-9(-)	6 SPA. @ ABOUT 6'-9(-)	7 SPA. @ ABOUT 5'-9(+)	8 SPA. @ ABOUT 5'-0(+)	9 SPA. @ ABOUT 4'-6(-)	10 SPA. @ ABOUT 4'-0(+)	11 SPA. @ ABOUT 3'-8(-)	11 SPA. @ ABOUT 3'-8(-)	11 SPA. @ ABOUT 3'-8(-)
④	PU, STRENGTH I DESIGN LOAD FOR PIER (KIPS)	631 KIPS	699 KIPS	776 KIPS	860 KIPS	942 KIPS	1039 KIPS	1134 KIPS	1234 KIPS	1346 KIPS

① THIS TYPICAL NUMBER OF PILES MAY NEED TO BE MODIFIED DEPENDING ON SELECTED PIOL PILE TYPE AND SIZE, HEIGHT, AND RESISTANCE. IF THE NUMBER OF PILES IS DIFFERENT THAN IN THE TABLE FOR THE BRIDGE LENGTH, THE NUMBER OF 5h1 BARS AND OTHER QUANTITIES NEED TO BE CHECKED AND ADJUSTED AS NEEDED. PILES 10 INCHES AND 12 INCHES IN SIZE MUST BE SPACED 2'-6 OR MORE, PILES 14 INCHES IN SIZE MUST BE SPACED 2'-11 OR MORE, AND PILES 16 INCHES IN SIZE MUST BE SPACED 3'-4 OR MORE.

② MAXIMUM PIOL PILE SIZE AT THIS SPACING IS 14 INCHES.

③ MAXIMUM PIOL PILE SIZE AT THIS SPACING IS 12 INCHES.

④ STRENGTH I PIER DESIGN LOAD INCLUDES DYNAMIC LOAD ALLOWANCE (IM), AND PIER CAP WEIGHT IS BASED ON 45° SKEW. USE THIS PU FOR DETERMINING NUMBER OF PILES AND PILE LENGTH.

PIER NOTES:

ALL MONOLITHIC PIER CAP REINFORCING AND CONCRETE IS INCLUDED IN SUPERSTRUCTURE ESTIMATE OF QUANTITIES.

THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

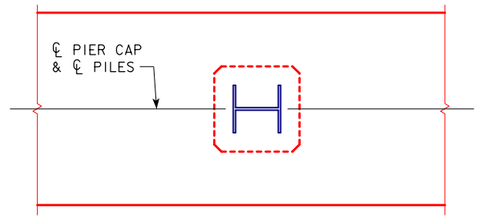
THE PIER PILES ARE TO BE DRIVEN TO FULL PENETRATION, IF PRACTICABLE, BUT IN NO CASE TO A BEARING VALUE LESS THAN THE PILE BEARING REQUIRED FOR EACH BRIDGE LENGTH AS SHOWN ON THIS SHEET. ADDITIONAL DRIVING CAPACITY MAY BE REQUIRED THROUGH SCOURABLE LAYERS. REFER TO GENERAL PLAN NOTES FOR ADDITIONAL INFORMATION.

CAP STEEL AS DETAILED ON PIOL STANDARD PILE DRAWING IS REQUIRED FOR MONOLITHIC PIER CAPS.

THE CONCRETE QUANTITIES ARE BASED ON THE USE OF TYPE 3 PILING. IF TYPE 1 OR TYPE 2 IS USED, THE CONCRETE QUANTITIES MAY BE ADJUSTED TO ACCOUNT FOR THE CONCRETE DISPLACED BY THE PILING.

ALL REINFORCING STEEL IS TO BE GRADE 60.

PIER PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.



PILE ORIENTATION DETAIL FOR TYPE 3 TRESTLE BENT PILES

REVISED 05-2014: CHANGED THE BAR LABEL FROM 5d1 TO 5h1 IN ENCIRCLED NOTE 1.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

MONOLITHIC PIER CAP DETAILS ALL BRIDGES

J30-23-06

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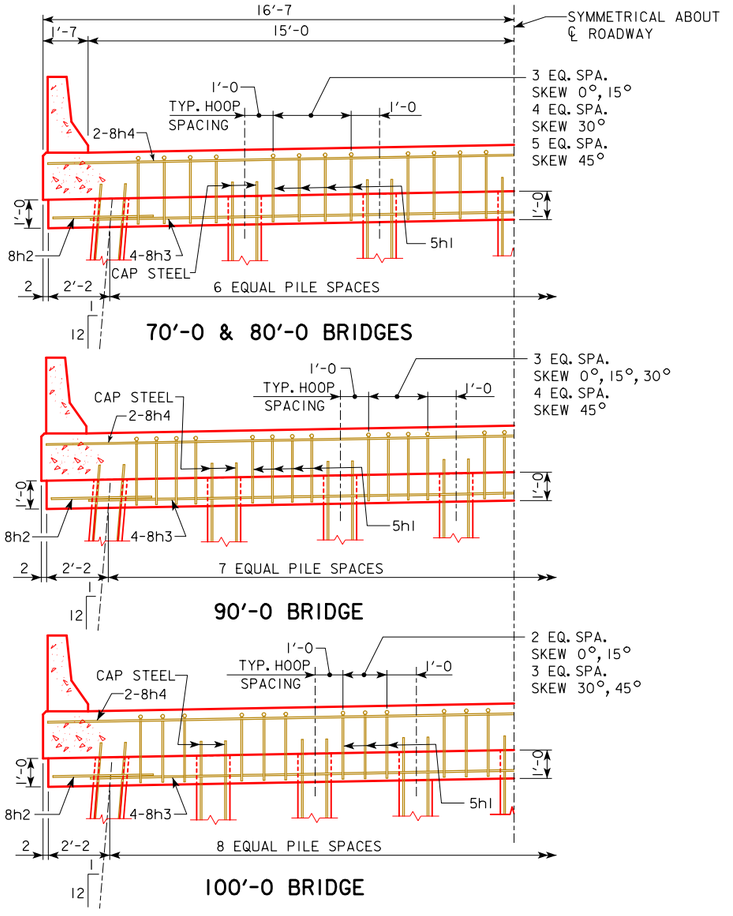


70'-0 & 80'-0 BRIDGES

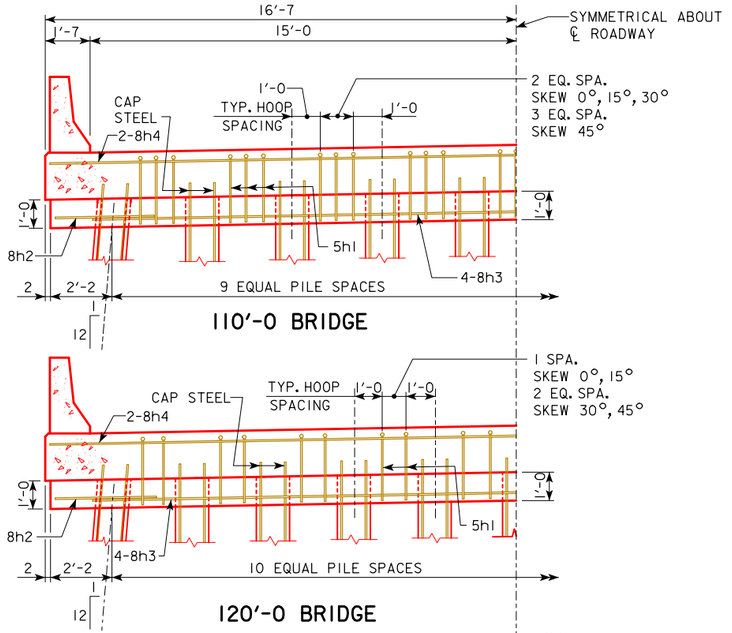
90'-0 BRIDGE

100'-0 BRIDGE

HALF SECTION NEAR PIER

SHOWING STIRRUP SPACING AND NUMBER OF PILING

NOTE: BOTTOM OF CAP ELEVATIONS WILL BE REQUIRED AT THE ℄ OF ROADWAY AND AT EACH EXTERIOR PILE.



110'-0 BRIDGE

120'-0 BRIDGE

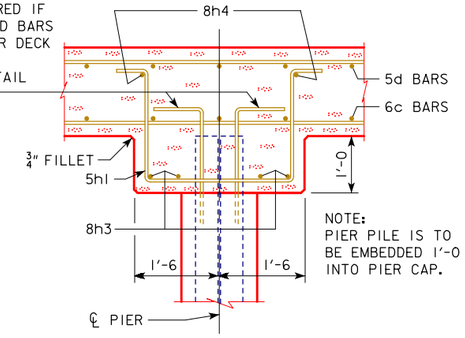
130'-0, 140'-0 & 150'-0 BRIDGES

HALF SECTION NEAR PIER

SHOWING STIRRUP SPACING AND NUMBER OF PILING

NOTE: BOTTOM OF CAP ELEVATIONS WILL BE REQUIRED AT THE ℄ OF ROADWAY AND AT EACH EXTERIOR PILE.

EPOXY COATED CAP STEEL REQUIRED IF EPOXY COATED BARS ARE USED FOR DECK REINFORCING. SEE PILE DETAIL SHEET P10L



NOTE: PIER PILE IS TO BE EMBEDDED 1'-0 INTO PIER CAP.

TYPICAL CAP SECTION

REVISED 07-2009: CHANGED THE DRAIN ANGLES DETAILS ON SECTION A-A.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

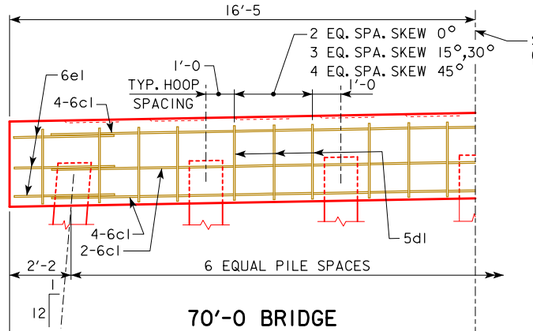
NOVEMBER, 2006

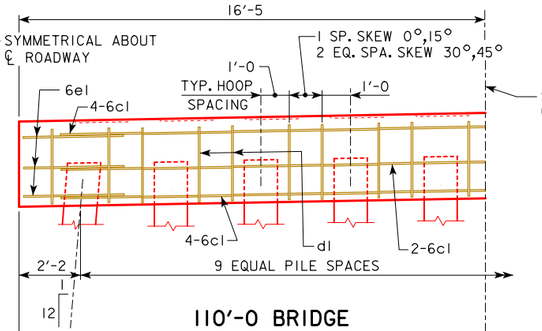
MONOLITHIC PIER CAP DETAILS ALL BRIDGES

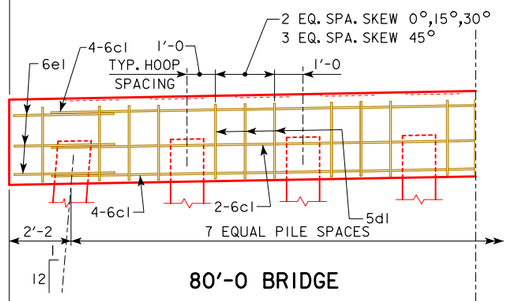
SHEET 2 OF 2

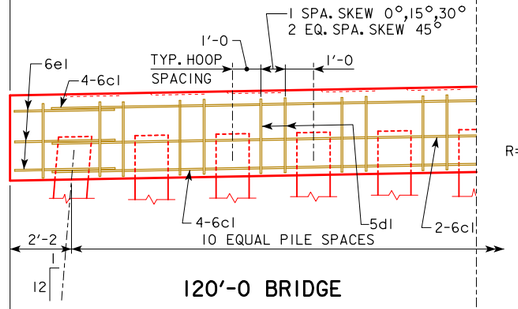
J30-24-06

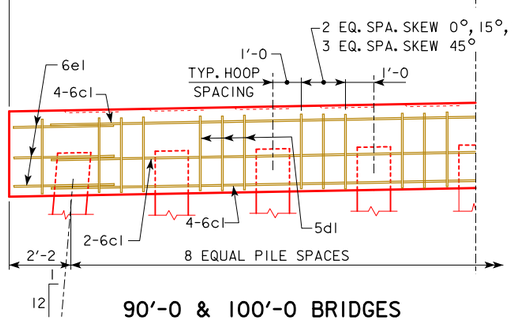
REVISED 08-2014: THE BRIDGE LENGTHS FOR THE TYP. HALF ELEVATION PIER CAP WERE CHANGED TO SHOW THE CORRECT HALF SECTION FOR THE CORRECT LENGTH.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

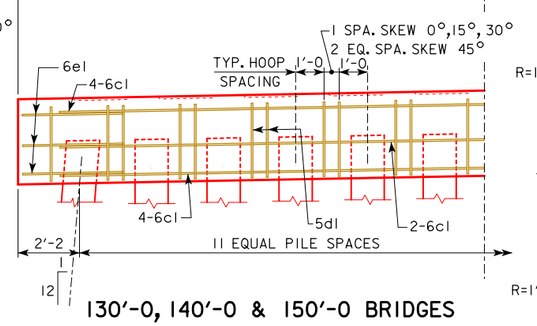




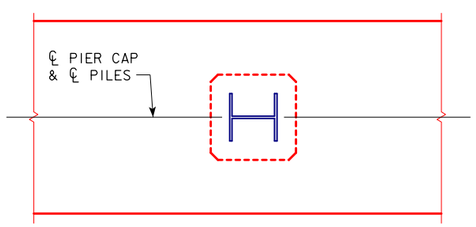




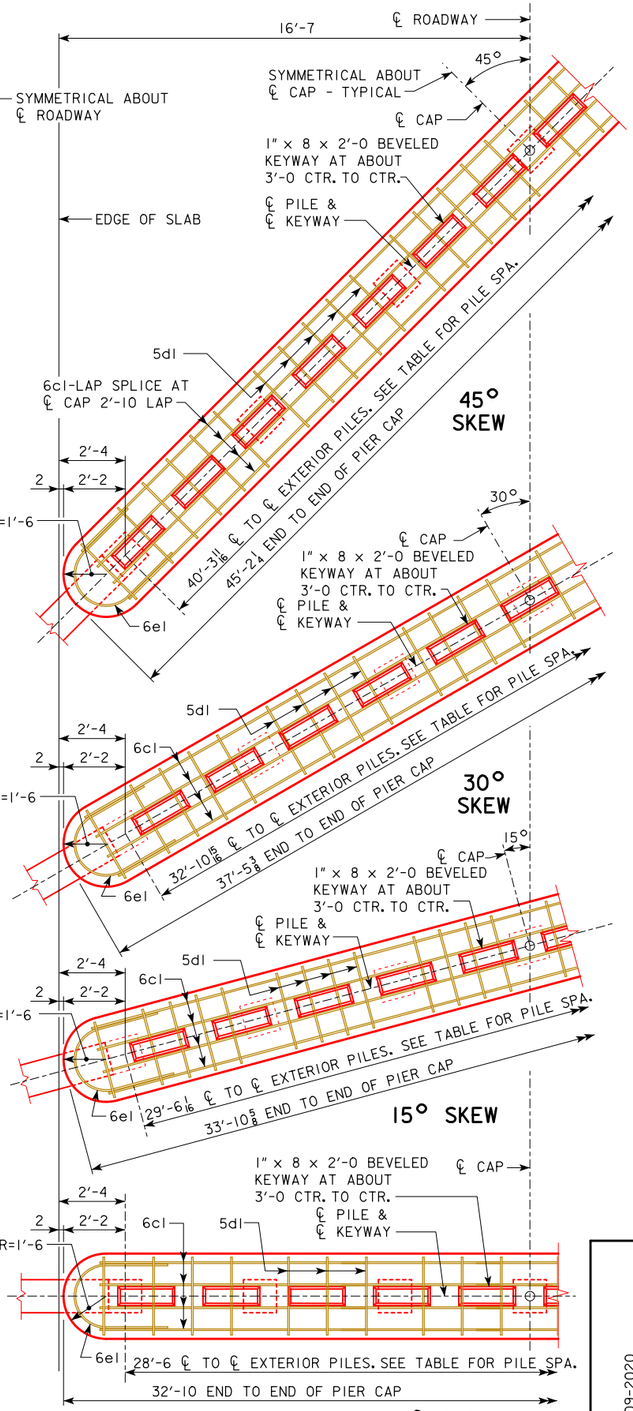




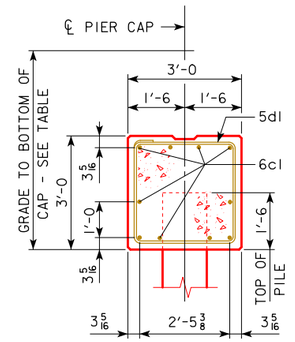
TYP. HALF ELEVATION PIER CAP
(LOOKING PARALLEL TO ℄ ROADWAY)



PILE ORIENTATION DETAIL FOR TYPE 3 TRESTLE BENT PILES

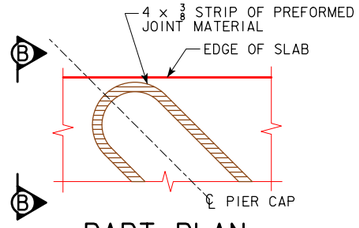


TYP. HALF PLAN VIEW
NOTE: NUMBER OF PILES AND STIRRUPS SHOWN ARE FOR A 70'-0 BRIDGE. CAP DIMENSIONS ARE TYPICAL FOR ALL BRIDGES.

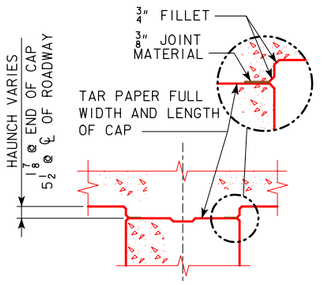


TYP. SECTION

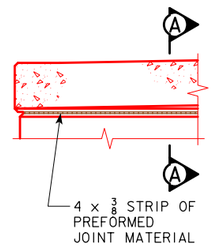
GRADE TO BOTTOM OF CAP DIMENSION	
70'-0 BRIDGE	4'-8
80'-0 BRIDGE	4'-8 3/4
90'-0 BRIDGE	4'-9 3/4
100'-0 BRIDGE	4'-11
110'-0 BRIDGE	5'-0
120'-0 BRIDGE	5'-1 1/2
130'-0 BRIDGE	5'-2 3/4
140'-0 BRIDGE	5'-4
150'-0 BRIDGE	5'-5 1/2



PART PLAN
SHOWING TREATMENT OF 4 x 3/8 STRIP OF PREFORMED JOINT MATERIAL AT ENDS OF PIER CAP. NOTE THAT JOINT MATERIAL IS TO GO ALL THE WAY AROUND PIER CAP FOR SQUARE AND SKEWED BRIDGES.



PART SECT A-A



PART SECT B-B

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

NON-MONOLITHIC PIER CAP DETAILS ALL BRIDGES

J30-25-06

09-2020 LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

SHEET 1 OF 2

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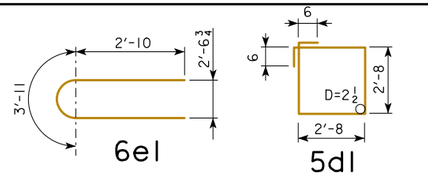
BILL OF REINFORCING STEEL - ONE PIER

BRIDGE LENGTH			70′-0 BRIDGE			80′-0 BRIDGE			90′-0 BRIDGE			100′-0 BRIDGE			110′-0 BRIDGE			120′-0 BRIDGE			130′-0 BRIDGE			140′-0 BRIDGE			150′-0 BRIDGE		
MARK	SKEW	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
6c1	0°		10	29′-10	448	10	29′-10	448	10	29′-10	448	10	29′-10	448	10	29′-10	448	10	29′-10	448	10	29′-10	448	10	29′-10	448	10	29′-10	448
	15°		10	30′-11	464	10	30′-11	464	10	30′-11	464	10	30′-11	464	10	30′-11	464	10	30′-11	464	10	30′-11	464	10	30′-11	464	10	30′-11	464
	30°		10	34′-6	518	10	34′-6	518	10	34′-6	518	10	34′-6	518	10	34′-6	518	10	34′-6	518	10	34′-6	518	10	34′-6	518	10	34′-6	518
	45°		20	22′-6	676	20	22′-6	676	20	22′-6	676	20	22′-6	676	20	22′-6	676	20	22′-6	676	20	22′-6	676	20	22′-6	676	20	22′-6	676
5d1	0°		20	11′-8	244	23	11′-8	280	26	11′-8	317	26	11′-8	317	20	11′-8	244	22	11′-8	268	24	11′-8	292	24	11′-8	292	24	11′-8	292
	15°		26	11′-8	317	23	11′-8	280	26	11′-8	317	26	11′-8	317	20	11′-8	244	22	11′-8	268	24	11′-8	292	24	11′-8	292	24	11′-8	292
	30°		26	11′-8	317	23	11′-8	280	34	11′-8	414	34	11′-8	414	29	11′-8	353	22	11′-8	268	24	11′-8	292	24	11′-8	292	24	11′-8	292
	45°		32	11′-8	390	30	11′-8	365	34	11′-8	414	34	11′-8	414	29	11′-8	353	32	11′-8	390	35	11′-8	426	35	11′-8	426	35	11′-8	426
6e1	ALL		6	9′-7	86	6	9′-7	86	6	9′-7	86	6	9′-7	86	6	9′-7	86	6	9′-7	86	6	9′-7	86	6	9′-7	86	6	9′-7	86

BENT BAR DETAILS



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

ESTIMATED QUANTITIES - ONE PIER

BRIDGE LENGTH	SKEW	70′-0	80′-0	90′-0	100′-0	110′-0	120′-0	130′-0	140′-0	150′-0
STRUCTURAL CONCRETE (CU. YDS.)	0°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
	15°	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	30°	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
	45°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
REINFORCING STEEL (LBS.)	0°	778	814	851	851	778	802	826	826	826
	15°	867	830	867	867	794	818	842	842	842
	30°	921	884	1018	1018	957	872	896	896	896
	45°	1152	1127	1176	1176	1115	1152	1188	1188	1188
PILING (NO.)	ALL	7	8	9	9	10	11	12	12	12

TYPICAL NUMBERS OF PILES AND SPACINGS AND FACTORED PIER LOADS

	BRIDGE LENGTH	70′-0	80′-0	90′-0	100′-0	110′-0	120′-0	130′-0	140′-0	150′-0
①	TYP. NO. OF PILES	7	8	9	9	10	11	12	12	12
	TYP. PILE SPACES @ 0°	6 SPA. @ 4′-9	7 SPA. @ ABOUT 4′-1(-)	8 SPA. @ ABOUT 3′-7(-)	8 SPA. @ ABOUT 3′-7(-)	② 9 SPA. @ 3′-2	③10 SPA. @ ABOUT 2′-10(+)	③11 SPA. @ ABOUT 2′-7(+)	③11 SPA. @ ABOUT 2′-7(+)	③11 SPA. @ ABOUT 2′-7(+)
	TYP. PILE SPACES @ 15°	6 SPA. @ ABOUT 4′-11(+)	7 SPA. @ ABOUT 4′-3(-)	8 SPA. @ ABOUT 3′-8(+)	8 SPA. @ ABOUT 3′-8(+)	② 9 SPA. @ ABOUT 3′-3(+)	②10 SPA. @ ABOUT 2′-11(+)	③11 SPA. @ ABOUT 2′-8(+)	③11 SPA. @ ABOUT 2′-8(+)	③11 SPA. @ ABOUT 2′-8(+)
	TYP. PILE SPACES @ 30°	6 SPA. @ ABOUT 5′-6(-)	7 SPA. @ ABOUT 4′-8(+)	8 SPA. @ ABOUT 4′-1(+)	8 SPA. @ ABOUT 4′-1(+)	9 SPA. @ ABOUT 3′-8(-)	②10 SPA. @ ABOUT 3′-3(+)	②11 SPA. @ ABOUT 3′-0(-)	②11 SPA. @ ABOUT 3′-0(-)	②11 SPA. @ ABOUT 3′-0(-)
	TYP. PILE SPACES @ 45°	6 SPA. @ ABOUT 6′-9(-)	7 SPA. @ ABOUT 5′-9(+)	8 SPA. @ ABOUT 5′-0(+)	8 SPA. @ ABOUT 5′-0(+)	9 SPA. @ ABOUT 4′-6(-)	10 SPA. @ ABOUT 4′-0(+)	11 SPA. @ ABOUT 3′-8(-)	11 SPA. @ ABOUT 3′-8(-)	11 SPA. @ ABOUT 3′-8(-)
④	PU, STRENGTH I DESIGN LOAD FOR PIER (KIPS)	688 KIPS	757 KIPS	834 KIPS	918 KIPS	1000 KIPS	1097 KIPS	1192 KIPS	1292 KIPS	1404 KIPS

① THIS TYPICAL NUMBER OF PILES MAY NEED TO BE MODIFIED DEPENDING ON SELECTED PIOL PILE TYPE AND SIZE, HEIGHT, AND RESISTANCE. IF THE NUMBER OF PILES IS DIFFERENT THAN IN THE TABLE FOR THE BRIDGE LENGTH, THE NUMBER OF 5d1 BARS AND OTHER QUANTITIES NEED TO BE CHECKED AND ADJUSTED AS NEEDED. PILES 10 INCHES AND 12 INCHES IN SIZE MUST BE SPACED 2′-6 OR MORE, PILES 14 INCHES IN SIZE MUST BE SPACED 2′-11 OR MORE, AND PILES 16 INCHES IN SIZE MUST BE SPACED 3′-4 OR MORE.

② MAXIMUM PIOL PILE SIZE AT THIS SPACING IS 14 INCHES.

③ MAXIMUM PIOL PILE SIZE AT THIS SPACING IS 12 INCHES.

④ STRENGTH I PIER DESIGN LOAD INCLUDES DYNAMIC LOAD ALLOWANCE (IM), AND PIER CAP WEIGHT IS BASED ON 45° SKEW. USE THIS PU FOR DETERMINING NUMBER OF PILES AND PILE LENGTH.

PIER NOTES:

FOR SKEWED BRIDGES BOTTOM OF PIER CAP IS TO BE SLOPED TO COMPENSATE FOR GRADE. THEREFORE BOTTOM OF CAP ELEVATIONS WILL BE REQUIRED AT THE ℄ OF ROADWAY AND AT EACH EXTERIOR PILE.

THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

THE PIER PILES ARE TO BE DRIVEN TO FULL PENETRATION, IF PRACTICABLE, BUT IN NO CASE TO A BEARING VALUE LESS THAN THE PILE BEARING REQUIRED FOR EACH BRIDGE LENGTH AS SHOWN ON THIS SHEET. ADDITIONAL DRIVING CAPACITY MAY BE REQUIRED THROUGH SCOURABLE LAYERS. REFER TO GENERAL PLAN NOTES FOR ADDITIONAL INFORMATION.

THE CONCRETE QUANTITIES ARE BASED ON THE USE OF TYPE 3 PILING. IF TYPE 1 OR TYPE 2 IS USED, THE CONCRETE QUANTITIES MAY BE ADJUSTED TO ACCOUNT FOR THE CONCRETE DISPLACED BY THE PILING.

ALL REINFORCING STEEL IS TO BE GRADE 60.

PIER PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.

REVISED 05-2014: CHANGED THE NUMBER OF PILES AND THE PILE SPACINGS FOR THE 80′ & 90′ BRIDGE LENGTHS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30′ ROADWAY, 3 SPAN BRIDGES

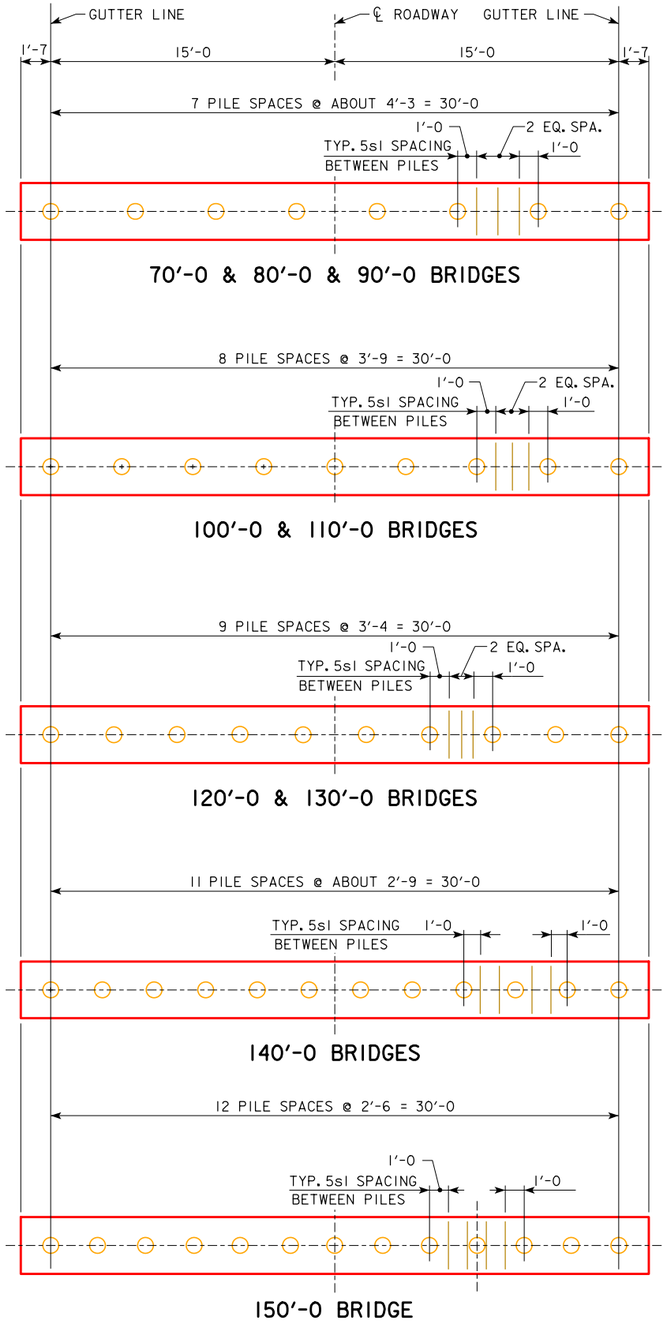
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

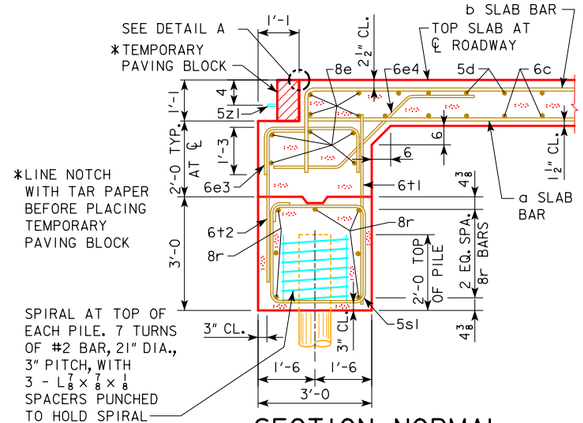
NON-MONOLITHIC PIER CAP DETAILS ALL BRIDGES

SHEET 2 OF 2

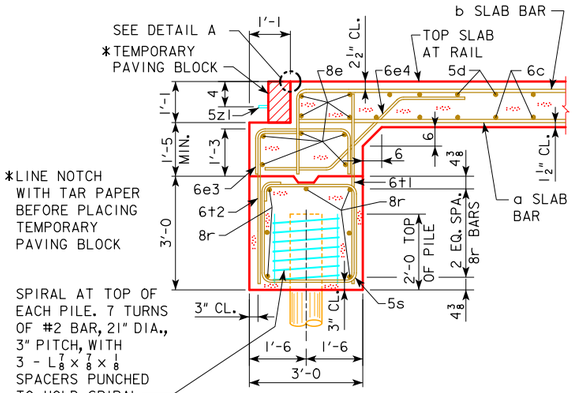
J30-26-06



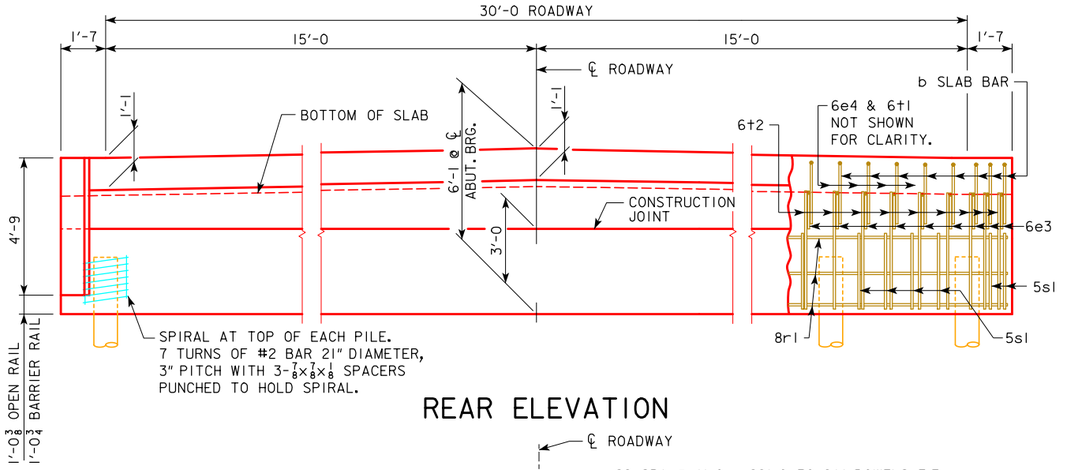
PILE PLAN - 0° SKEW
WOOD PILING



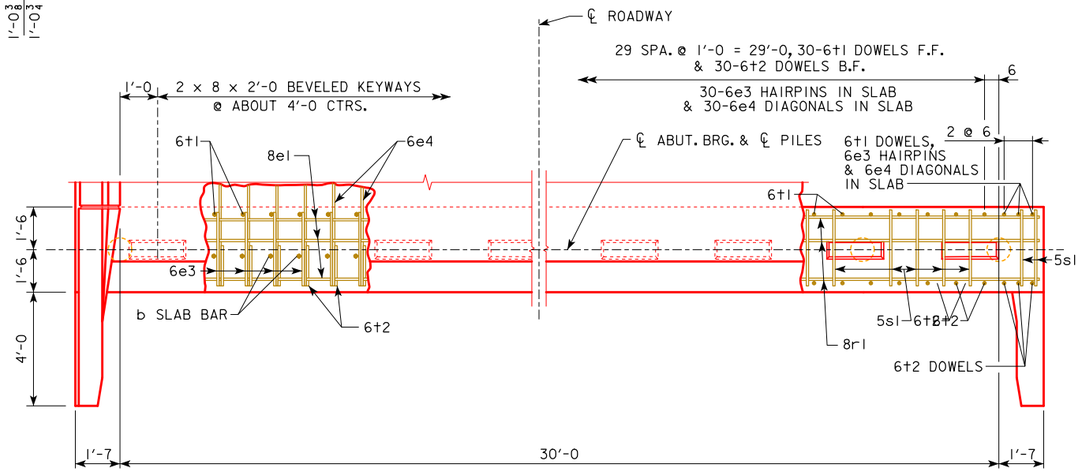
SECTION NORMAL
TO ABUTMENT AT ℄



SECTION NORMAL TO
ABUTMENT AT GUTTERLINE



REAR ELEVATION



PLAN VIEW

NOTE: WING REINFORCING AND RAIL NOT SHOWN.

6e3, 6e4, AND 8e1 ARE INCLUDED WITH SUPERSTRUCTURE QUANTITIES.

NUMBER OF PILES AND ABUTMENT DESIGN LOADS

BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
PILING - NUMBER	8	8	8	9	9	10	10	12	13
PU, STRENGTH I DESIGN LOAD - KIPS	377	402	426	456	485	519	551	Δ 646	Δ 684

Δ INCLUDES DYNAMIC LOAD ALLOWANCE

NOTE: PU, STRENGTH I DESIGN LOAD (KIPS) IS NOT THE VALUE USED IN THE FIELD FOR DRIVING PILES.

ABUTMENT NOTES:

THE CONCRETE AND REINFORCING STEEL FOR THE WINGS IS INCLUDED WITH THE SUPERSTRUCTURE.

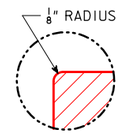
DETAILS ON THIS SHEET ARE TO BE USED ONLY WHEN ABUTMENTS ARE PLACED ON TIMBER PILES.

THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

TIMBER PILES SHALL BE DRIVEN TO FULL PENETRATION IF PRACTICABLE BUT IN NO CASE TO A BEARING VALUE LESS THAN SHOWN IN DESIGN PLANS. TIMBER PILES SHALL NOT BE DRIVEN TO MORE THAN 160 TONS.

ALL REINFORCING STEEL IS TO BE GRADE 60.

ABUTMENT PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.



DETAIL A

REVISED 06-2013: REVISION FOR LRFD PILE DESIGN.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

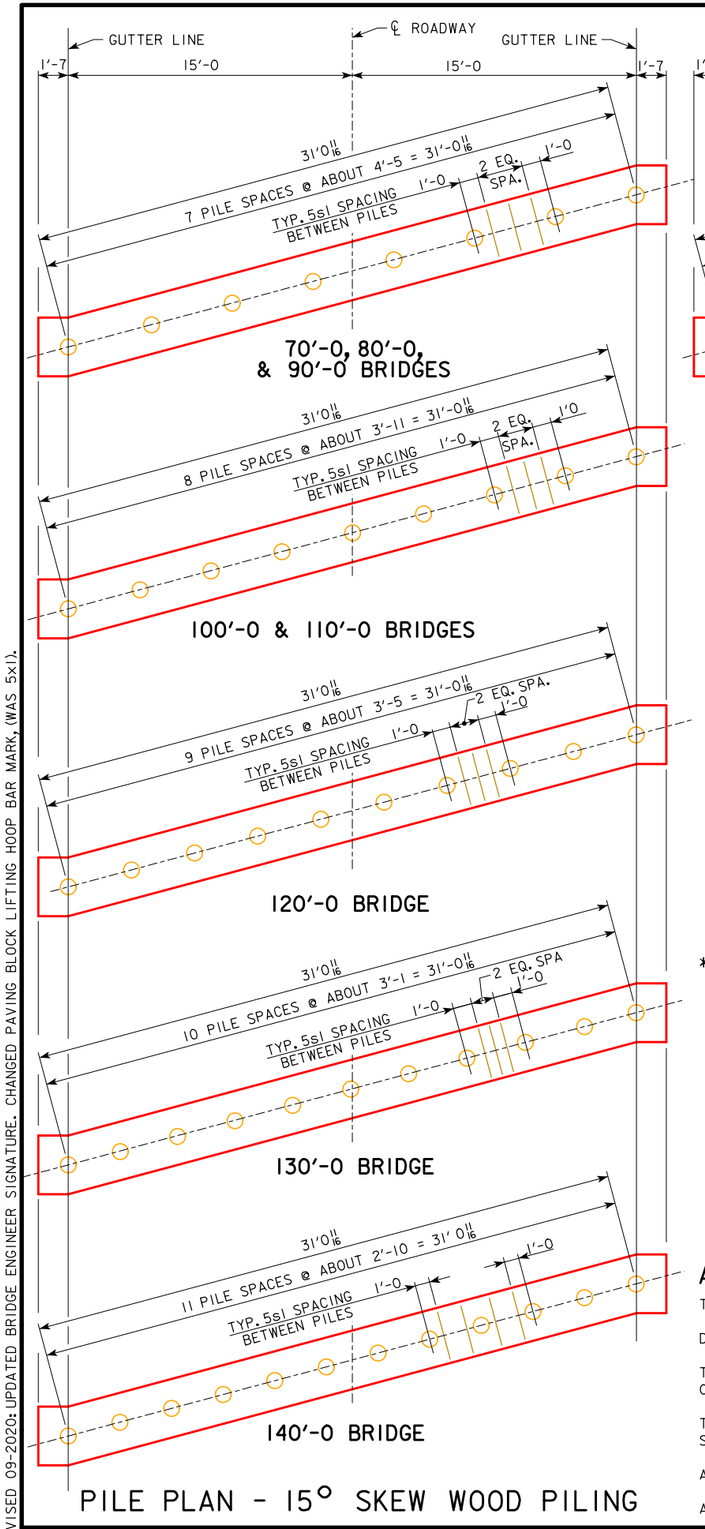
STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

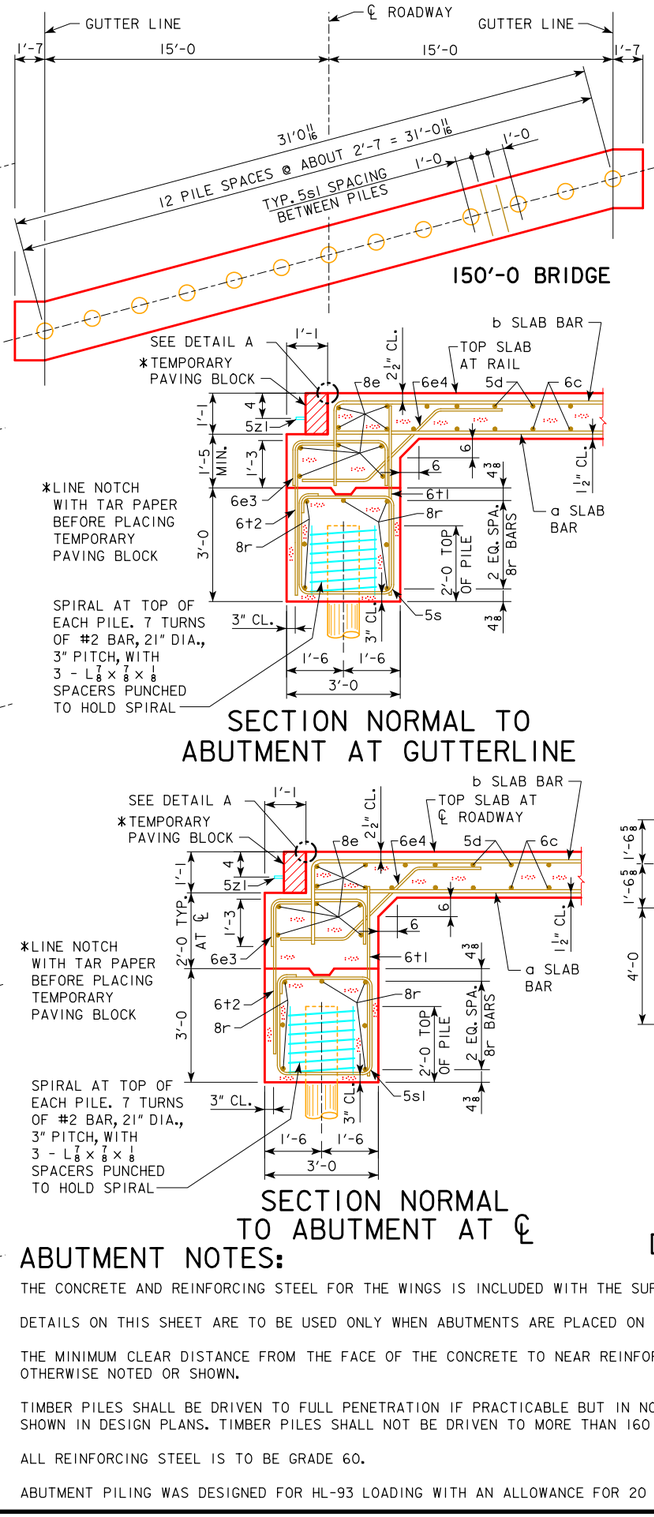
NOVEMBER, 2006

ABUTMENT DETAILS
0° SKEW - TIMBER PILING

J30-27-06

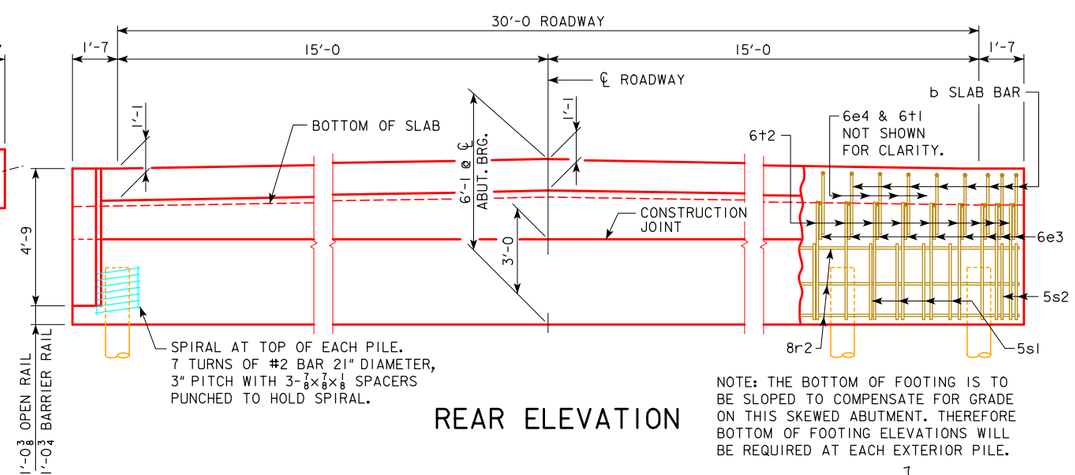


PILE PLAN - 15° SKEW WOOD PILING



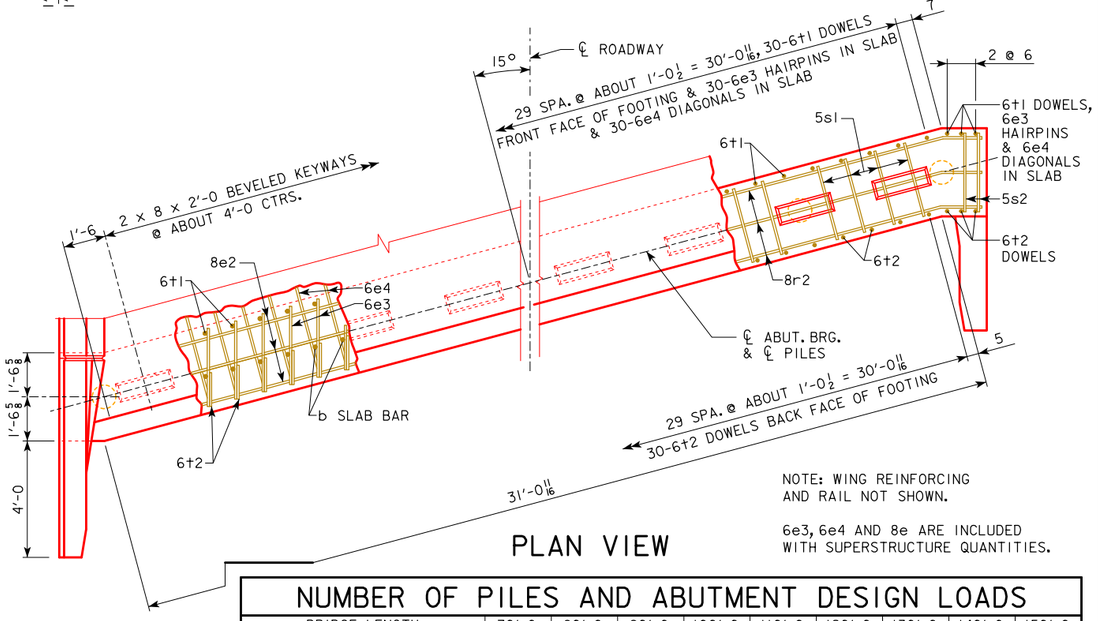
SECTION NORMAL TO ABUTMENT AT GUTTERLINE

SECTION NORMAL TO ABUTMENT AT ℄



REAR ELEVATION

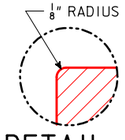
NOTE: THE BOTTOM OF FOOTING IS TO BE SLOPED TO COMPENSATE FOR GRADE ON THIS SKEWED ABUTMENT. THEREFORE BOTTOM OF FOOTING ELEVATIONS WILL BE REQUIRED AT EACH EXTERIOR PILE.



PLAN VIEW

NOTE: WING REINFORCING AND RAIL NOT SHOWN.

6e3, 6e4 AND 8e ARE INCLUDED WITH SUPERSTRUCTURE QUANTITIES.



DETAIL A

NUMBER OF PILES AND ABUTMENT DESIGN LOADS

BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
PILING - NUMBER	8	8	8	9	9	10	11	12	13
PU, STRENGTH I DESIGN LOAD - KIPS	381	406	429	460	489	522	555	Δ 650	Δ 688

Δ INCLUDES DYNAMIC LOAD ALLOWANCE

NOTE: PU, STRENGTH I DESIGN LOAD (KIPS) IS NOT THE VALUE USED IN THE FIELD FOR DRIVING PILES.

ABUTMENT NOTES:

THE CONCRETE AND REINFORCING STEEL FOR THE WINGS IS INCLUDED WITH THE SUPERSTRUCTURE.

DETAILS ON THIS SHEET ARE TO BE USED ONLY WHEN ABUTMENTS ARE PLACED ON TIMBER PILES.

THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

TIMBER PILES SHALL BE DRIVEN TO FULL PENETRATION IF PRACTICABLE BUT IN NO CASE TO A BEARING VALUE LESS THAN SHOWN IN DESIGN PLANS. TIMBER PILES SHALL NOT BE DRIVEN TO MORE THAN 160 TONS.

ALL REINFORCING STEEL IS TO BE GRADE 60.

ABUTMENT PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.

REVISED 06-2013: REVISION FOR LRFD PILE DESIGN.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

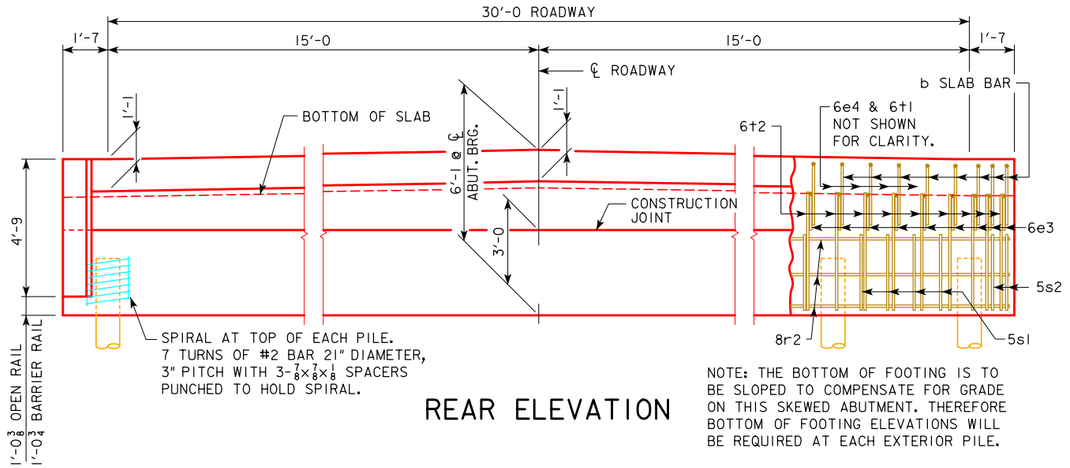
STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

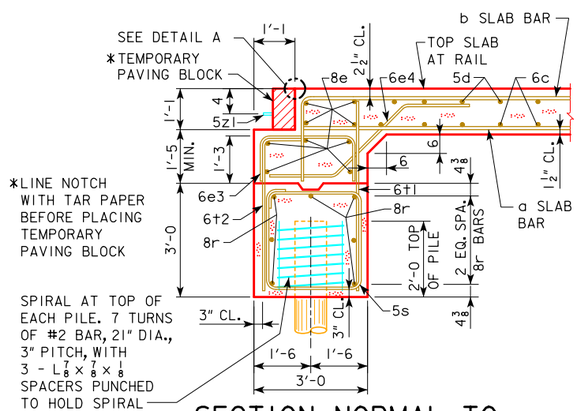
ABUTMENT DETAILS 15° SKEW - TIMBER PILING

J30-28-06

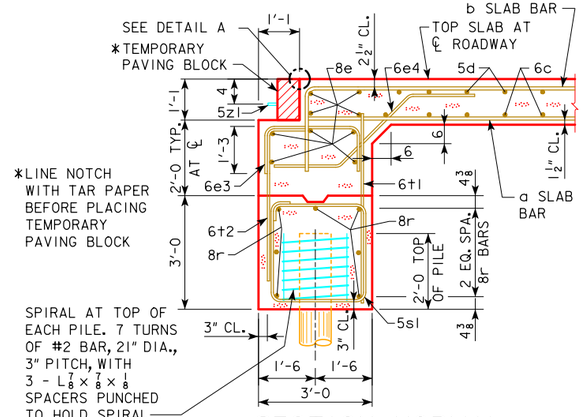


REAR ELEVATION

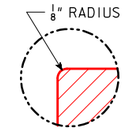
NOTE: THE BOTTOM OF FOOTING IS TO BE SLOPED TO COMPENSATE FOR GRADE ON THIS SKEWED ABUTMENT. THEREFORE BOTTOM OF FOOTING ELEVATIONS WILL BE REQUIRED AT EACH EXTERIOR PILE.



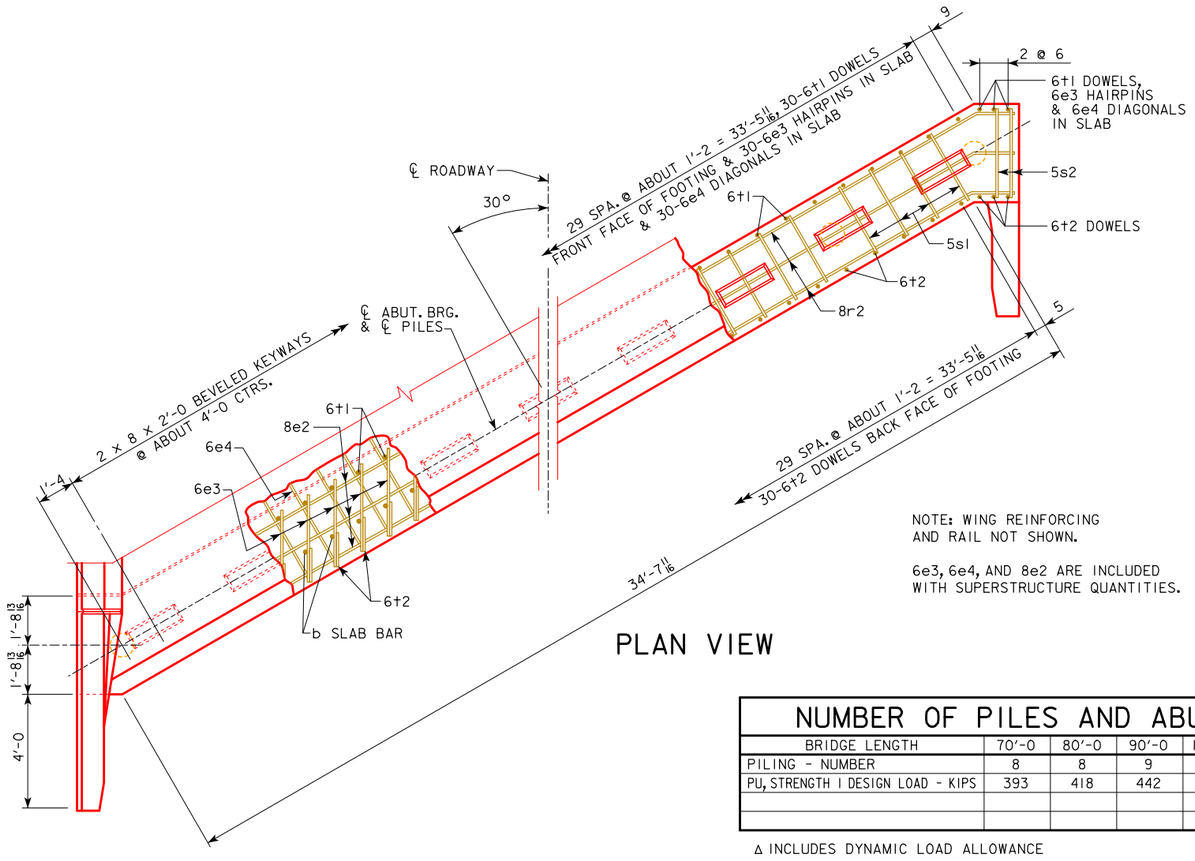
SECTION NORMAL TO ABUTMENT AT GUTTERLINE



SECTION NORMAL TO ABUTMENT AT ℄



DETAIL A



NOTE: WING REINFORCING AND RAIL NOT SHOWN.

6e3, 6e4, AND 8e2 ARE INCLUDED WITH SUPERSTRUCTURE QUANTITIES.

PLAN VIEW

NUMBER OF PILES AND ABUTMENT DESIGN LOADS

BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
PILING - NUMBER	8	8	9	9	10	10	11	12	13
PU, STRENGTH I DESIGN LOAD - KIPS	393	418	442	472	501	535	567	Δ 663	Δ 701

Δ INCLUDES DYNAMIC LOAD ALLOWANCE

NOTE: PU, STRENGTH I DESIGN LOAD (KIPS) IS NOT THE VALUE USED IN THE FIELD FOR DRIVING PILES.

ABUTMENT NOTES:

THE CONCRETE AND REINFORCING STEEL FOR THE WINGS IS INCLUDED WITH THE SUPERSTRUCTURE.

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ALL REINFORCING STEEL IS TO BE GRADE 60.

ABUTMENT PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

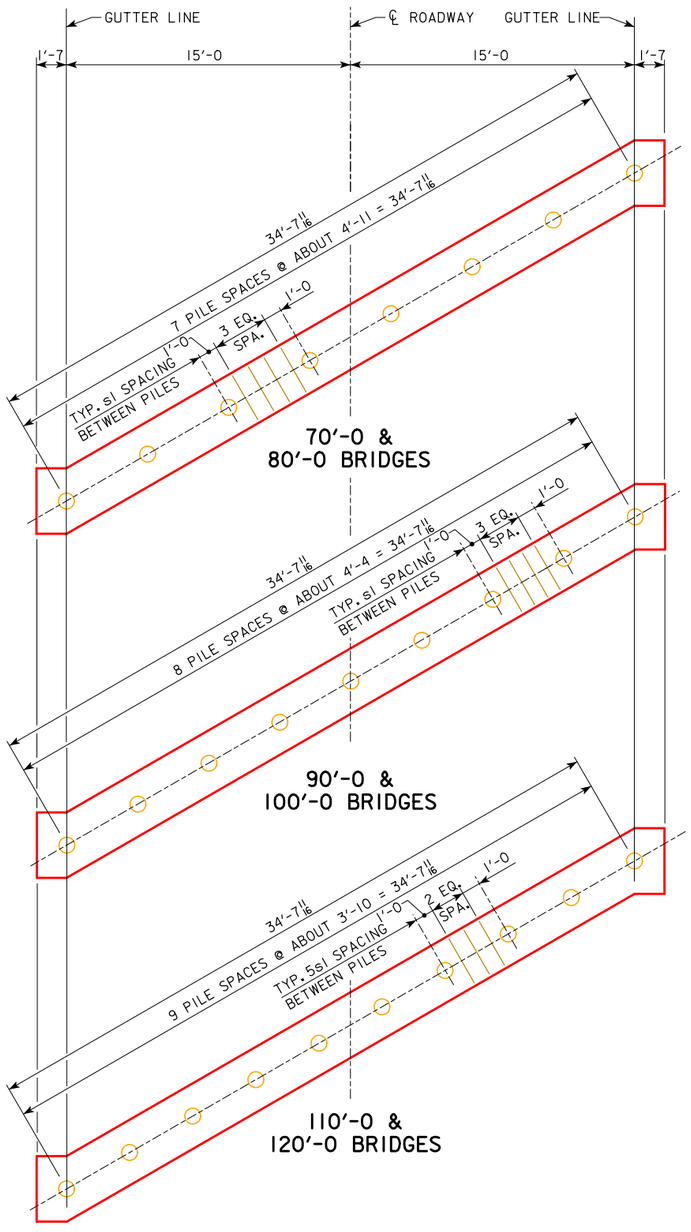
CONTINUOUS CONCRETE SLAB BRIDGES

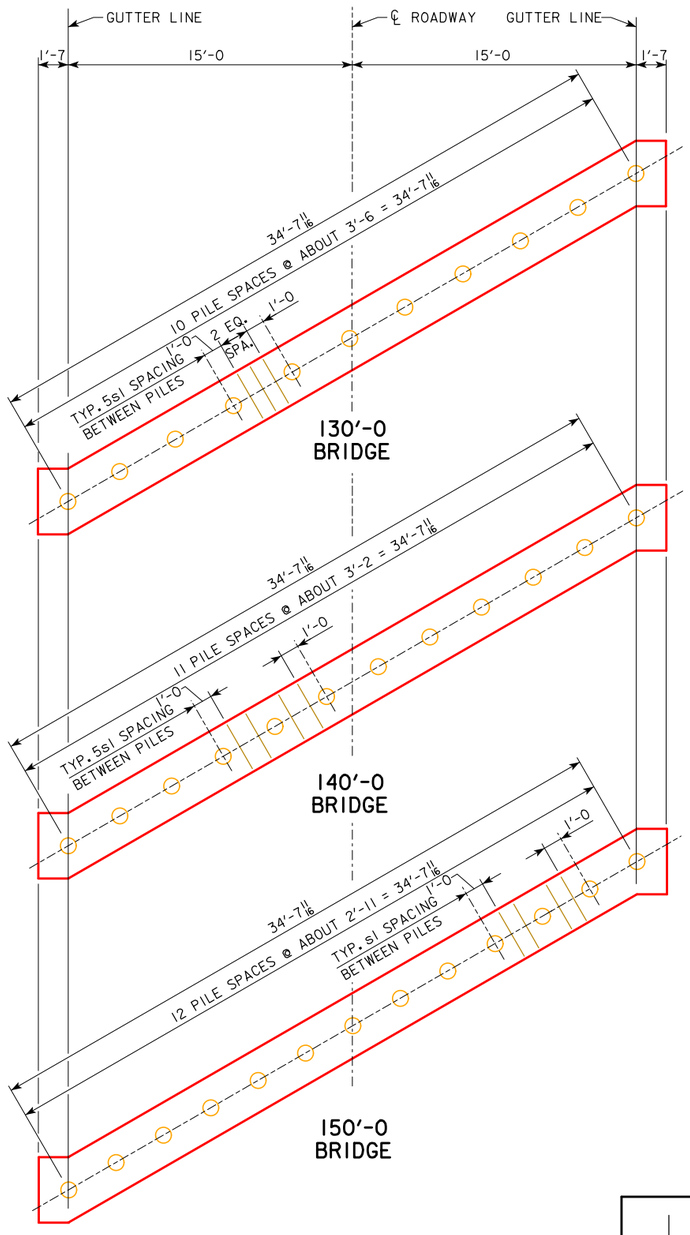
NOVEMBER, 2006

ABUTMENT DETAILS 30° SKEW - TIMBER PILING

J30-29-06

REVISED 06-2013: REVISION FOR LRFD PILE DESIGN.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).





PILE PLAN - 30° SKEW
WOOD PILING

REVISED 12-2008: REVISED ENTIRE SHEET.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

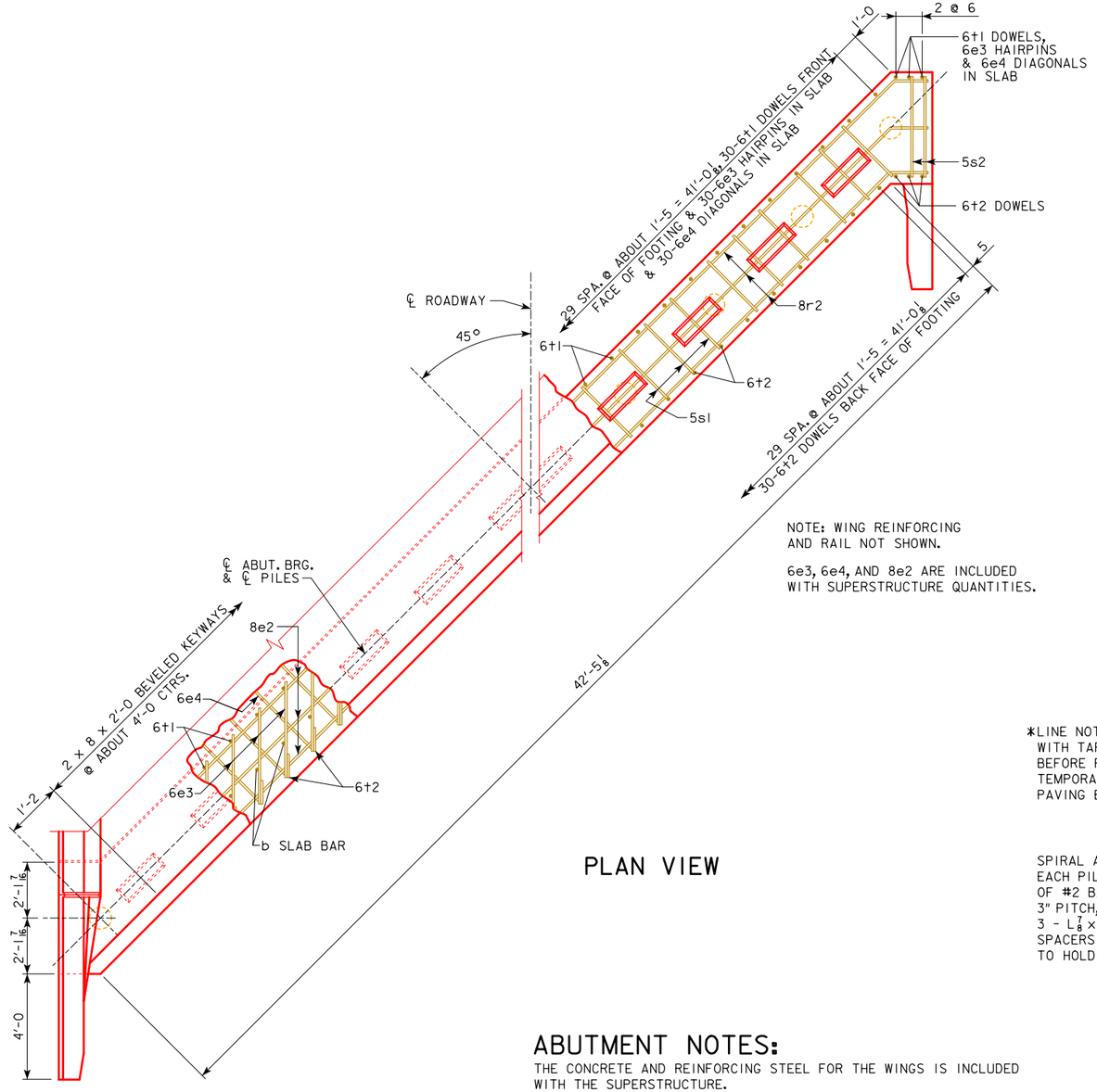
STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

ABUTMENT DETAILS
30° SKEW - TIMBER PILING

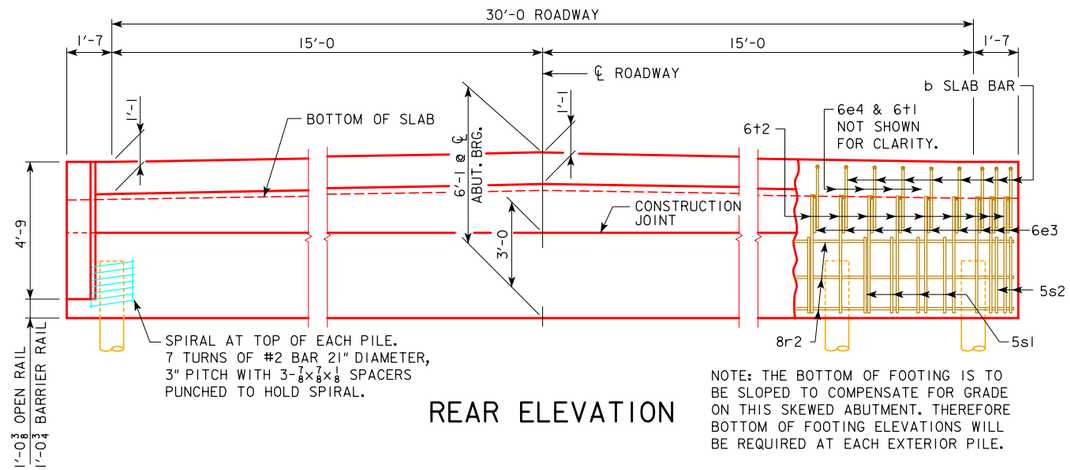
J30-30-06



PLAN VIEW

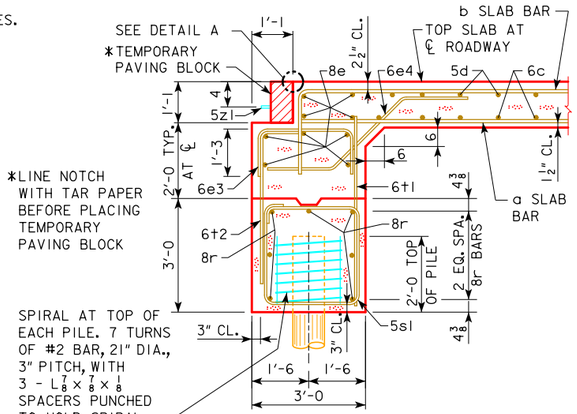
NOTE: WING REINFORCING AND RAIL NOT SHOWN.

6e3, 6e4, AND 8e2 ARE INCLUDED WITH SUPERSTRUCTURE QUANTITIES.

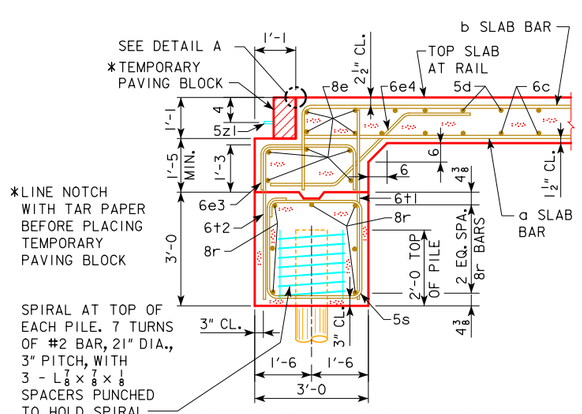


REAR ELEVATION

NOTE: THE BOTTOM OF FOOTING IS TO BE SLOPED TO COMPENSATE FOR GRADE ON THIS SKEWED ABUTMENT. THEREFORE BOTTOM OF FOOTING ELEVATIONS WILL BE REQUIRED AT EACH EXTERIOR PILE.



SECTION NORMAL TO ABUTMENT AT ℄



SECTION NORMAL TO ABUTMENT AT GUTTERLINE

ABUTMENT NOTES:

THE CONCRETE AND REINFORCING STEEL FOR THE WINGS IS INCLUDED WITH THE SUPERSTRUCTURE.

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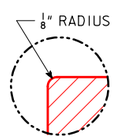
ABUTMENT PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.



DETAIL A

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT *Highway Division*

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

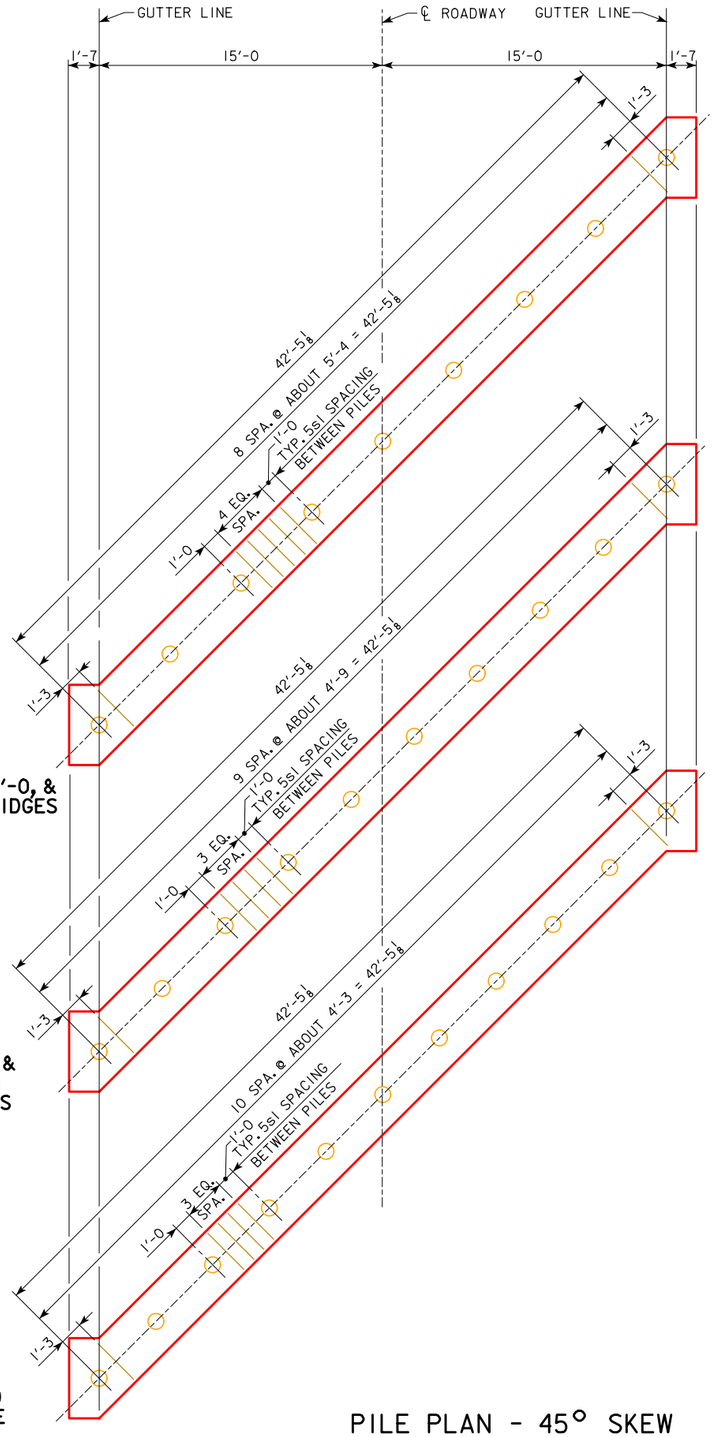
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

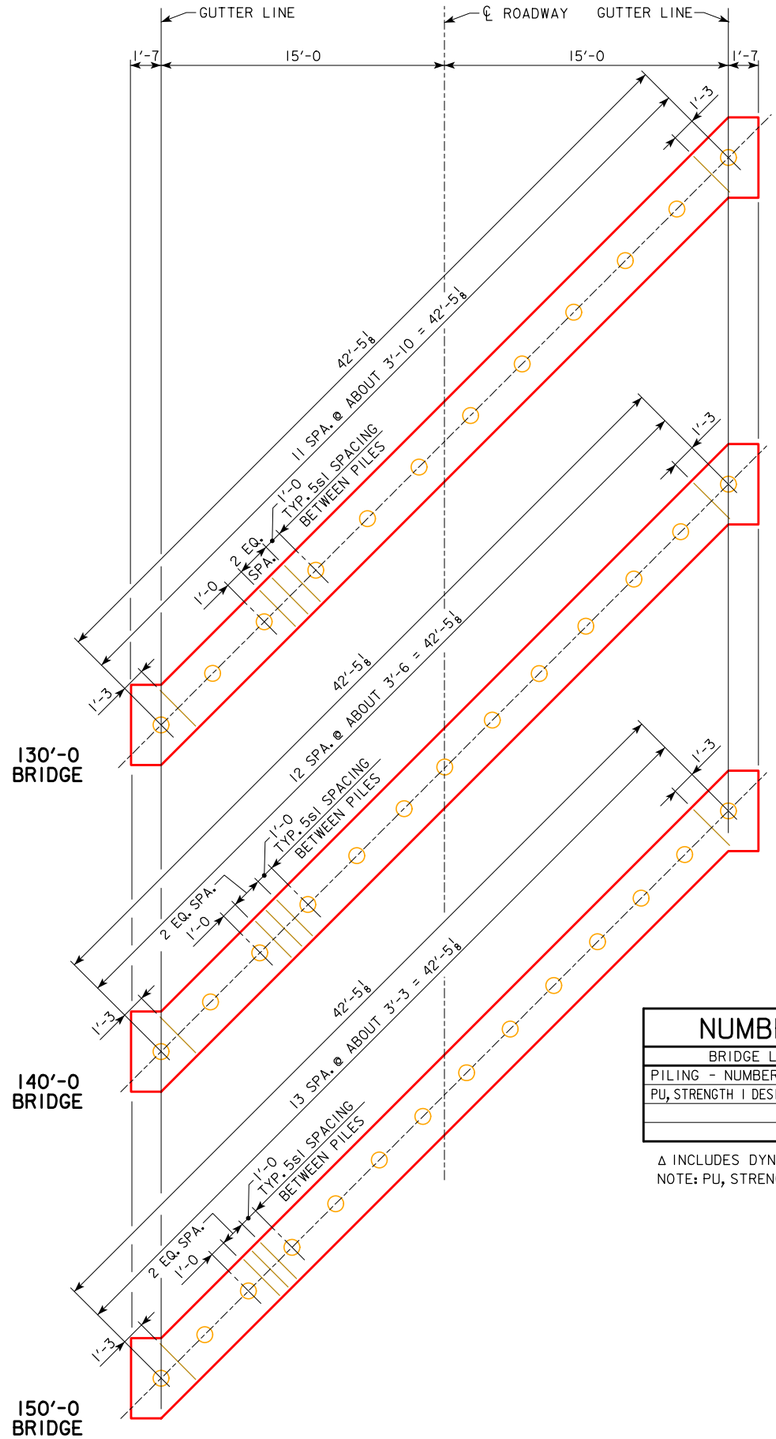
ABUTMENT DETAILS 45° SKEW - TIMBER PILING

J30-31-06

REVISED 06-2013: REVISION FOR LRFD PILE DESIGN.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).



PILE PLAN - 45° SKEW
WOOD PILING



NUMBER OF PILES AND ABUTMENT DESIGN LOADS

BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
PILING - NUMBER	9	9	9	10	10	11	12	13	14
PU, STRENGTH I DESIGN LOAD - KIPS	419	444	468	499	528	562	595	Δ 691	Δ 729

Δ INCLUDES DYNAMIC LOAD ALLOWANCE
NOTE: PU, STRENGTH I DESIGN LOAD (KIPS) IS NOT THE VALUE USED IN THE FIELD FOR DRIVING PILES.

REVISED 06-2013: REVISION FOR LRFD PILE DESIGN.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

ABUTMENT DETAILS 45° SKEW - TIMBER PILING

J30-32-06

BILL OF REINFORCING STEEL - ONE ABUTMENT - 0° SKEW

MARK	LOCATION	SHAPE	LENGTH	70'-0 NO.	70'-0 WEIGHT	80'-0 NO.	80'-0 WEIGHT	90'-0 NO.	90'-0 WEIGHT	100'-0 NO.	100'-0 WEIGHT	110'-0 NO.	110'-0 WEIGHT	120'-0 NO.	120'-0 WEIGHT	130'-0 NO.	130'-0 WEIGHT	140'-0 NO.	140'-0 WEIGHT	150'-0 NO.	150'-0 WEIGHT
8r1	ABUTMENT FOOTING LONGITUDINAL		32'-10	7	614	7	614	7	614	7	614	7	614	7	614	7	614	7	614	7	614
5s1	ABUTMENT FOOTING HOOPS		11'-0	25	287	25	287	25	287	28	321	28	321	31	356	31	356	26	298	28	321
6t1	FOOTING TO SLAB DOWELS		5'-0	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270
6t2	FOOTING TO SLAB DOWELS		5'-7	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302
#2	PILE SPIRAL		38'-6	8	51	8	51	8	51	9	58	9	58	10	64	10	64	12	77	13	84
	SPIRAL SPACERS - L $\frac{7}{8}$ X $\frac{7}{8}$ X $\frac{1}{8}$ X 0.70		1'-10	24	31	24	31	24	31	27	35	27	35	30	39	30	39	36	46	39	50
	REINFORCING STEEL - TOTAL (LBS.)				1555		1555		1555		1600		1600		1645		1645		1607		1641

BILL OF REINFORCING STEEL - ONE ABUTMENT - 15° SKEW

MARK	LOCATION	SHAPE	LENGTH	70'-0 NO.	70'-0 WEIGHT	80'-0 NO.	80'-0 WEIGHT	90'-0 NO.	90'-0 WEIGHT	100'-0 NO.	100'-0 WEIGHT	110'-0 NO.	110'-0 WEIGHT	120'-0 NO.	120'-0 WEIGHT	130'-0 NO.	130'-0 WEIGHT	140'-0 NO.	140'-0 WEIGHT	150'-0 NO.	150'-0 WEIGHT
8r2	ABUTMENT FOOTING LONGITUDINAL		33'-11	7	634	7	634	7	634	7	634	7	634	7	634	7	634	7	634	7	634
5s1	ABUTMENT FOOTING HOOPS		11'-0	21	241	21	241	21	241	24	275	24	275	27	310	30	344	22	252	24	275
5s2	ABUTMENT FOOTING HOOPS		11'-3	4	47	4	47	4	47	4	47	4	47	4	47	4	47	4	47	4	47
6t1	FOOTING TO SLAB DOWELS		5'-0	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270
6t2	FOOTING TO SLAB DOWELS		5'-7	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302
#2	PILE SPIRAL		38'-6	8	51	8	51	8	51	9	58	9	58	10	64	11	71	12	77	13	84
	SPIRAL SPACERS - L $\frac{7}{8}$ X $\frac{7}{8}$ X $\frac{1}{8}$ X 0.70		1'-10	24	31	24	31	24	31	27	35	27	35	30	39	33	42	36	46	39	50
	REINFORCING STEEL - TOTAL (LBS.)				1576		1576		1576		1621		1621		1666		1710		1628		1662

BILL OF REINFORCING STEEL - ONE ABUTMENT - 30° SKEW

MARK	LOCATION	SHAPE	LENGTH	70'-0 NO.	70'-0 WEIGHT	80'-0 NO.	80'-0 WEIGHT	90'-0 NO.	90'-0 WEIGHT	100'-0 NO.	100'-0 WEIGHT	110'-0 NO.	110'-0 WEIGHT	120'-0 NO.	120'-0 WEIGHT	130'-0 NO.	130'-0 WEIGHT	140'-0 NO.	140'-0 WEIGHT	150'-0 NO.	150'-0 WEIGHT
8r2	ABUTMENT FOOTING LONGITUDINAL		37'-6	7	701	7	701	7	701	7	701	7	701	7	701	7	701	7	701	7	701
5s1	ABUTMENT FOOTING HOOPS		11'-0	28	321	28	321	32	367	32	367	27	310	27	310	30	344	22	252	24	275
5s2	ABUTMENT FOOTING HOOPS		11'-11	4	50	4	50	4	50	4	50	4	50	4	50	4	50	4	50	4	50
6t1	FOOTING TO SLAB DOWELS		5'-0	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270
6t2	FOOTING TO SLAB DOWELS		5'-7	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302
#2	PILE SPIRAL		38'-6	8	51	8	51	9	58	9	58	10	64	10	64	11	71	12	77	13	84
	SPIRAL SPACERS - L $\frac{7}{8}$ X $\frac{7}{8}$ X $\frac{1}{8}$ X 0.70		1'-10	24	31	24	31	27	35	27	35	30	39	30	39	33	42	36	46	39	50
	REINFORCING STEEL - TOTAL (LBS.)				1726		1726		1783		1783		1736		1736		1780		1698		1732

BILL OF REINFORCING STEEL - ONE ABUTMENT - 45° SKEW

MARK	LOCATION	SHAPE	LENGTH	70'-0 NO.	70'-0 WEIGHT	80'-0 NO.	80'-0 WEIGHT	90'-0 NO.	90'-0 WEIGHT	100'-0 NO.	100'-0 WEIGHT	110'-0 NO.	110'-0 WEIGHT	120'-0 NO.	120'-0 WEIGHT	130'-0 NO.	130'-0 WEIGHT	140'-0 NO.	140'-0 WEIGHT	150'-0 NO.	150'-0 WEIGHT
8r2	ABUTMENT FOOTING LONGITUDINAL		45'-3	7	846	7	846	7	846	7	846	7	846	7	846	7	846	7	846	7	846
5s1	ABUTMENT FOOTING HOOPS		11'-0	40	459	40	459	40	459	36	413	36	413	40	459	33	379	36	413	39	447
5s2	ABUTMENT FOOTING HOOPS		13'-6	4	56	4	56	4	56	4	56	4	56	4	56	4	56	4	56	4	56
6t1	FOOTING TO SLAB DOWELS		5'-0	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270
6t2	FOOTING TO SLAB DOWELS		5'-7	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302
#2	PILE SPIRAL		38'-6	9	58	9	58	9	58	10	64	10	64	11	71	12	77	13	84	14	90
	SPIRAL SPACERS - L $\frac{7}{8}$ X $\frac{7}{8}$ X $\frac{1}{8}$ X 0.70		1'-10	27	35	27	35	27	35	30	39	30	39	33	42	36	46	39	50	42	54
	REINFORCING STEEL - TOTAL (LBS.)				2026		2026		2026		1990		1990		2046		1976		2021		2065

NOTE: THE PILE SPIRALS AND SPIRAL SPACERS ARE TO BE NON-COATED REINFORCING BUT MAY BE EPOXY COATED AT THE CONTRACTORS OPTION AND EXPENSE.

ESTIMATED QUANTITIES - ONE ABUT. - 0° SKEW

LOCATION	UNIT	QUANTITY								
BRIDGE LENGTH		70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	11.6	11.6	11.6	11.6	11.6	11.5	11.5	11.4	11.3
REINFORCING STEEL	LBS.	1555	1555	1555	1600	1600	1645	1645	1607	1641
WOOD PILES (TREATED)	NO.	8	8	8	9	9	10	10	12	13
PREBORE HOLES	FT.	-	-	-	-	-	-	-	120	130

ESTIMATED QUANTITIES - ONE ABUT. - 15° SKEW

LOCATION	UNIT	QUANTITY								
BRIDGE LENGTH		70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	11.0	11.0	11.0	11.0	11.0	10.9	10.9	10.8	10.7
REINFORCING STEEL	LBS.	1576	1576	1576	1621	1621	1666	1710	1628	1662
WOOD PILES (TREATED)	NO.	8	8	8	9	9	10	11	12	13
PREBORE HOLES	FT.	-	-	-	-	-	-	-	120	130

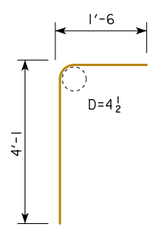
ESTIMATED QUANTITIES - ONE ABUT. - 30° SKEW

LOCATION	UNIT	QUANTITY								
BRIDGE LENGTH		70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	12.3	12.3	12.2	12.2	12.2	12.2	12.2	12.1	12.0
REINFORCING STEEL	LBS.	1726	1726	1783	1783	1736	1736	1780	1698	1732
WOOD PILES (TREATED)	NO.	8	8	9	9	10	10	11	12	13
PREBORE HOLES	FT.	-	-	-	-	-	-	-	120	130

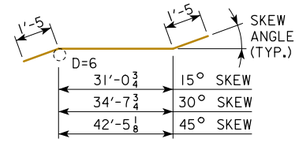
ESTIMATED QUANTITIES - ONE ABUT. - 45° SKEW

LOCATION	UNIT	QUANTITY								
BRIDGE LENGTH		70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	15.2	15.2	15.1	15.1	15.1	15.1	15.0	15.0	14.9
REINFORCING STEEL	LBS.	2026	2026	2026	1990	1990	2046	1976	2021	2065
WOOD PILES (TREATED)	NO.	9	9	9	10	10	11	12	13	14
PREBORE HOLES	FT.	-	-	-	-	-	-	-	130	140

BENT BAR DETAILS



6t2



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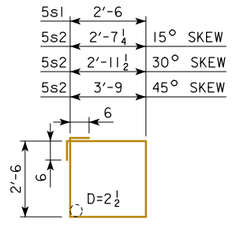


5s1 & 5s2

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

REVISED 07-2009: CONCRETE QUANTITIES CHANGED.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

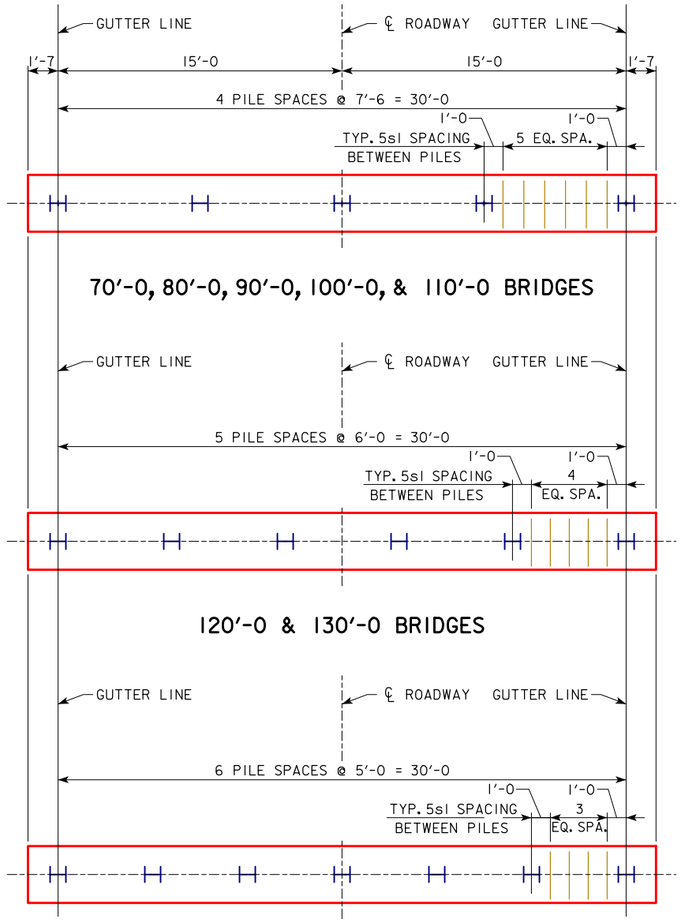
STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

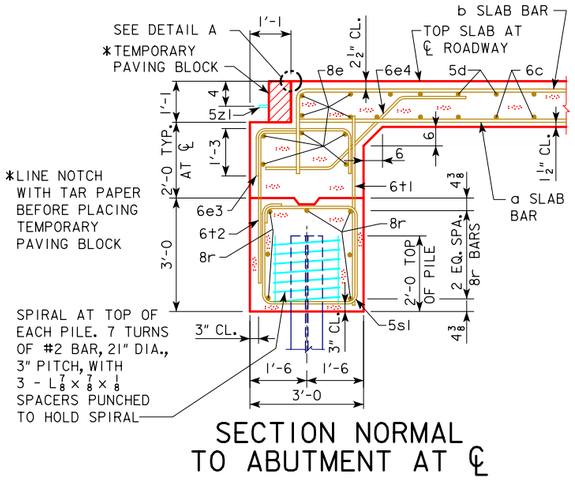
CONTINUOUS CONCRETE SLAB BRIDGES

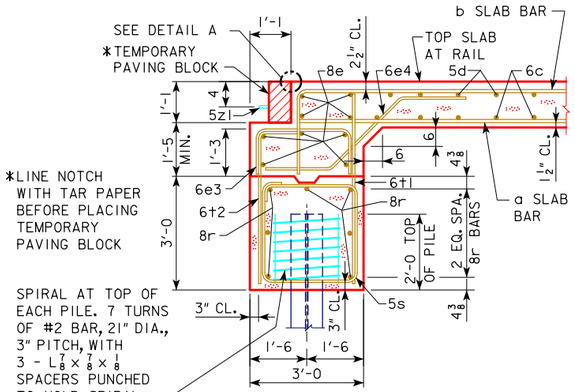
NOVEMBER, 2006

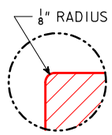
ABUTMENT DETAILS
TIMBER PILING

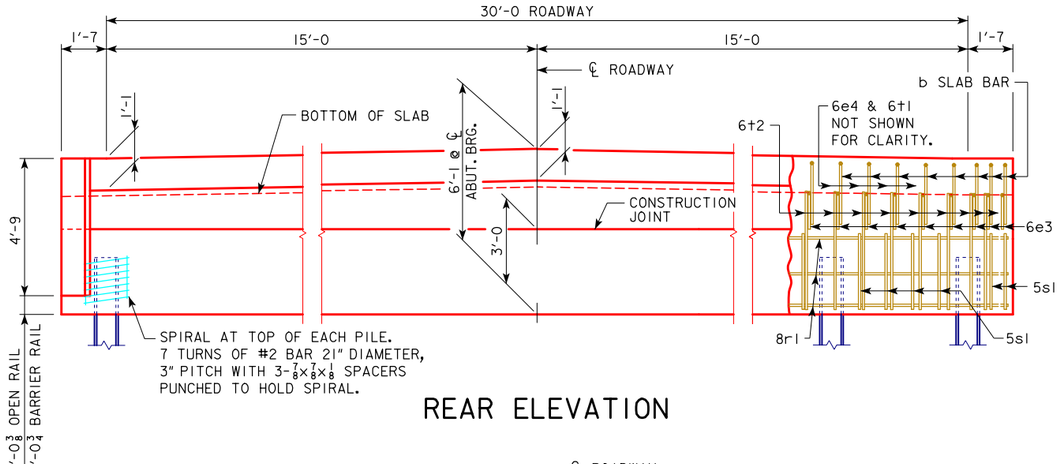
J30-33-06

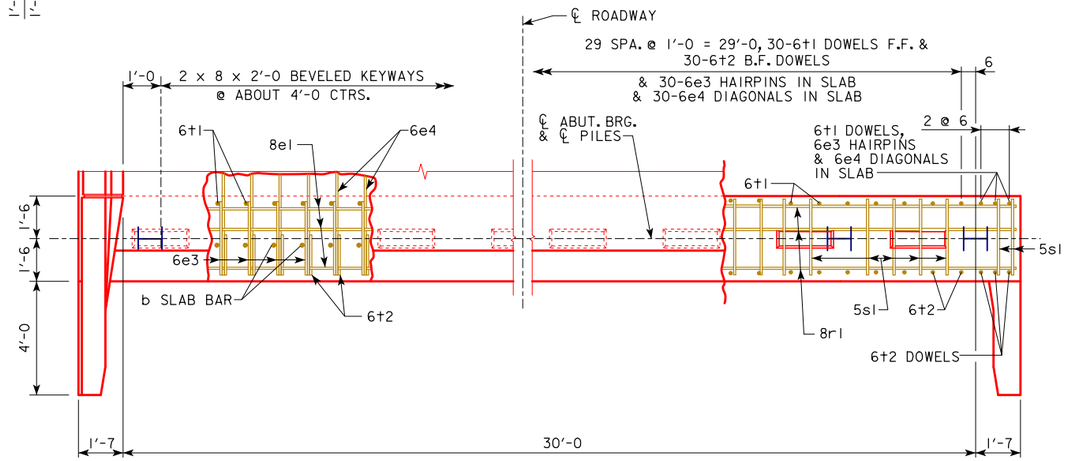












NOTE: WING REINFORCING AND RAIL NOT SHOWN.

6e3, 6e4, AND 8e1 ARE INCLUDED WITH SUPERSTRUCTURE QUANTITIES.

NUMBER OF PILES AND ABUTMENT DESIGN LOADS

BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
PILING - NUMBER	5	5	5	5	5	6	6	7	7
PU, STRENGTH I DESIGN LOAD - KIPS	377	402	426	456	485	519	561	Δ 646	Δ 684

Δ INCLUDES DYNAMIC LOAD ALLOWANCE

NOTE: PU, STRENGTH I DESIGN LOAD (KIPS) IS NOT THE VALUE USED IN THE FIELD FOR DRIVING PILES.

PILE PLAN - 0° SKEW
STEEL PILING

ABUTMENT NOTES:

ALL PILING HP 10x42.

THE CONCRETE AND REINFORCING STEEL FOR THE WINGS IS INCLUDED WITH THE SUPERSTRUCTURE.

DETAILS ON THIS SHEET ARE TO BE USED ONLY WHEN ABUTMENTS ARE PLACED ON STEEL PILES. IF ROCK IS ENCOUNTERED CLOSER THAN 12'-0 BELOW ABUTMENT FOOTING, SPECIAL ANALYSIS MAY BE REQUIRED.

THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

STEEL ABUTMENT PILES SHALL BE DRIVEN TO FULL PENETRATION IF PRACTICABLE BUT IN NO CASE TO A BEARING VALUE LESS THAN SHOWN IN DESIGN PLANS.

ALL REINFORCING STEEL IS TO BE GRADE 60.

ABUTMENT PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.

REVISED 06-2013: REVISION FOR LRFD PILE DESIGN.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

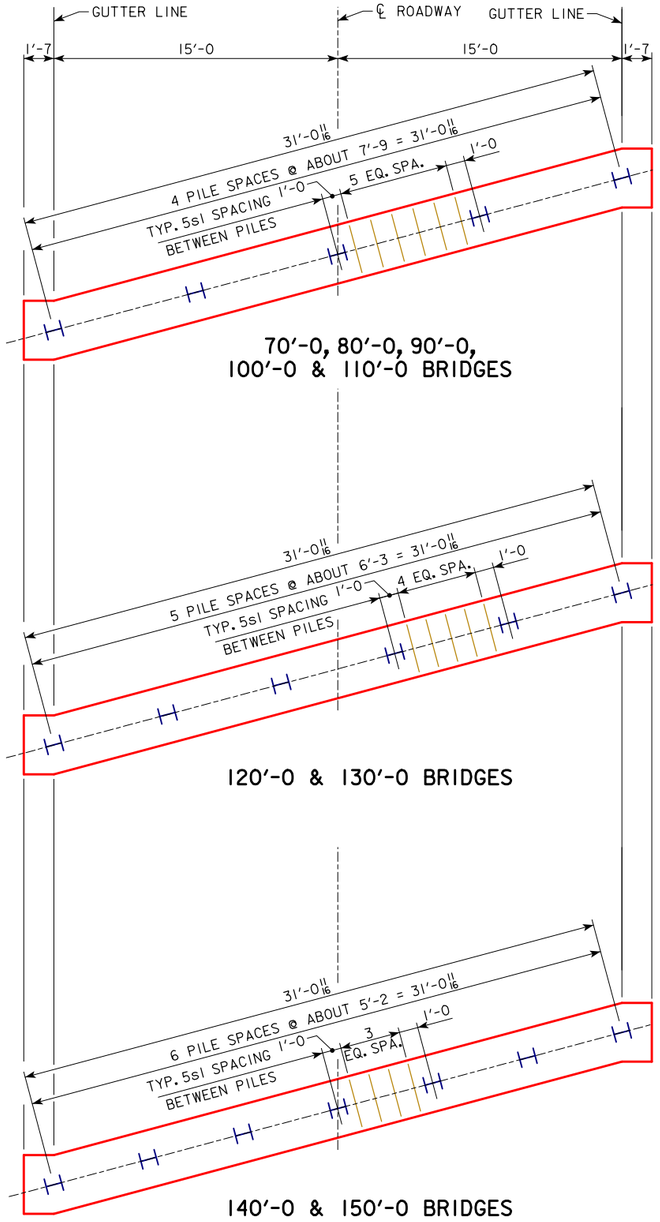
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

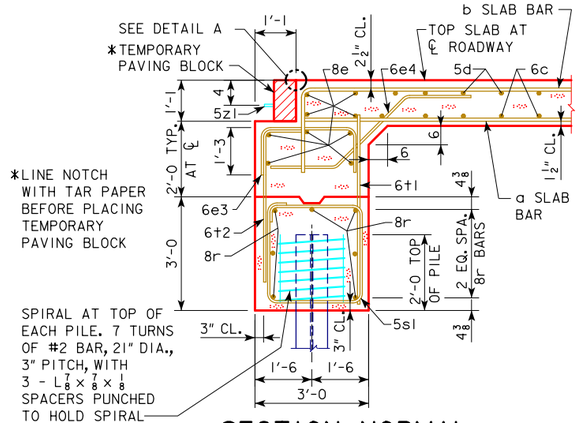
ABUTMENT DETAILS
0° SKEW - STEEL PILING

J30-34-06

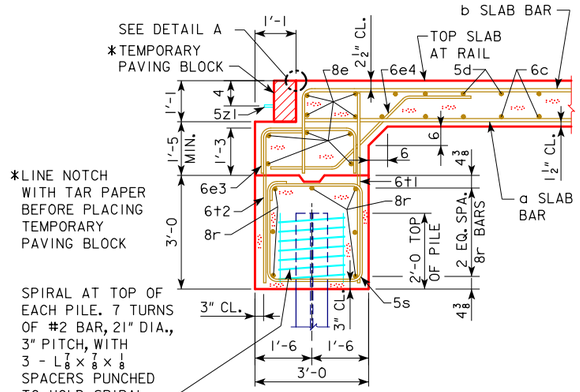
8/31/2020 12:17:26 PM bkloss W:\Highway\Bridge\Standards\Bridges\J30-06.dgn J30-34-06 11x17_pdf.pltcfg



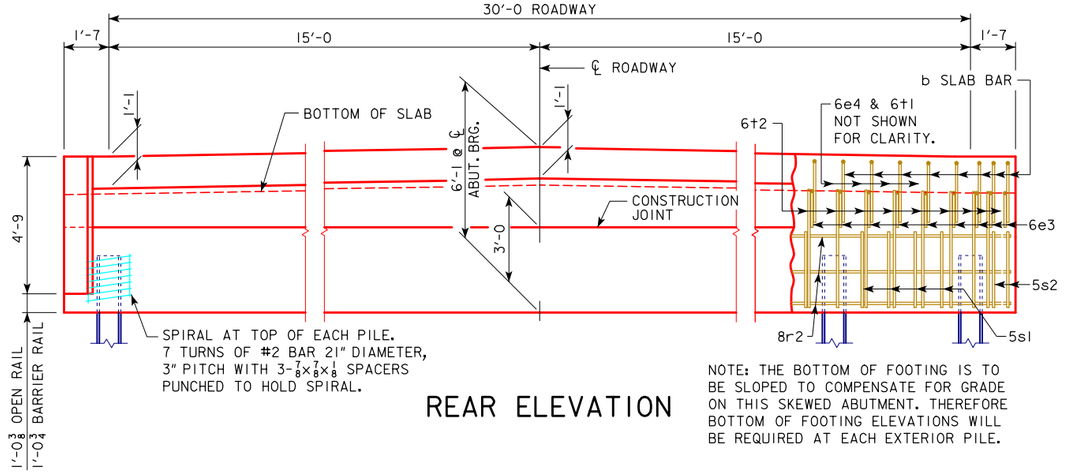
PILE PLAN - 15° SKEW
STEEL PILING



SECTION NORMAL
TO ABUTMENT AT ℄

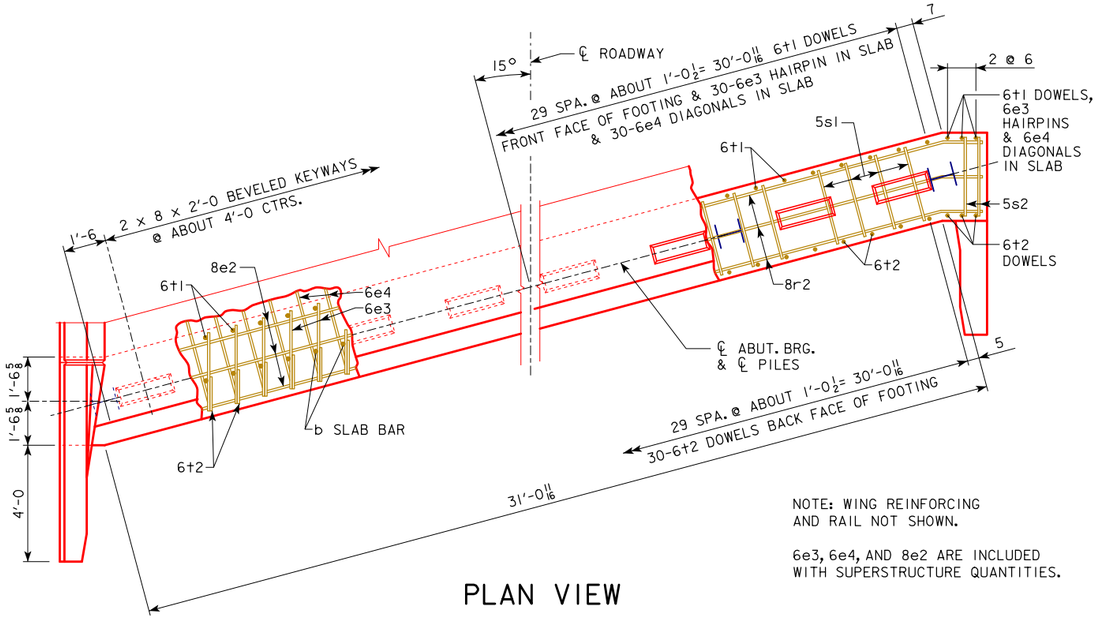


SECTION NORMAL TO
ABUTMENT AT GUTTERLINE



REAR ELEVATION

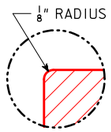
NOTE: THE BOTTOM OF FOOTING IS TO BE SLOPED TO COMPENSATE FOR GRADE ON THIS SKEWED ABUTMENT. THEREFORE BOTTOM OF FOOTING ELEVATIONS WILL BE REQUIRED AT EACH EXTERIOR PILE.



PLAN VIEW

NOTE: WING REINFORCING AND RAIL NOT SHOWN.

6e3, 6e4, AND 8e2 ARE INCLUDED WITH SUPERSTRUCTURE QUANTITIES.



DETAIL A

NUMBER OF PILES AND ABUTMENT DESIGN LOADS

BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
PILING - NUMBER	5	5	5	5	5	6	6	7	7
PU, STRENGTH I DESIGN LOAD - KIPS	381	406	429	460	489	522	555	Δ 650	Δ 688

Δ INCLUDES DYNAMIC LOAD ALLOWANCE
NOTE: PU, STRENGTH I DESIGN LOAD (KIPS) IS NOT THE VALUE USED IN THE FIELD FOR DRIVING PILES.

ABUTMENT NOTES:

ALL PILING HP 10x42.

THE CONCRETE AND REINFORCING STEEL FOR THE WINGS IS INCLUDED WITH THE SUPERSTRUCTURE.

DETAILS ON THIS SHEET ARE TO BE USED ONLY WHEN ABUTMENTS ARE PLACED ON STEEL PILES. IF ROCK IS ENCOUNTERED CLOSER THAN 12'-0 BELOW ABUTMENT FOOTING, SPECIAL ANALYSIS MAY BE REQUIRED.

THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

STEEL ABUTMENT PILES SHALL BE DRIVEN TO FULL PENETRATION IF PRACTICABLE BUT IN NO CASE TO A BEARING VALUE LESS THAN SHOWN IN DESIGN PLANS.

ALL REINFORCING STEEL IS TO BE GRADE 60.

ABUTMENT PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

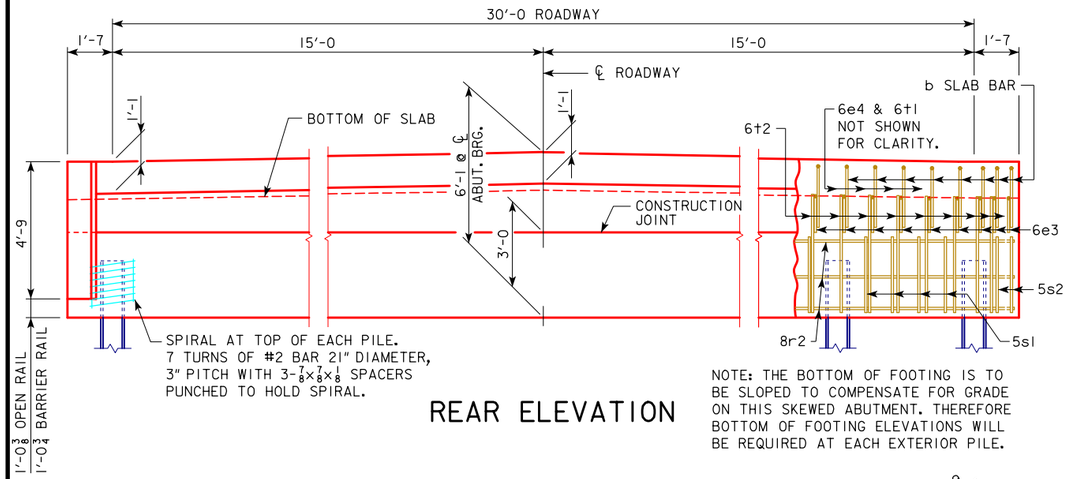
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

ABUTMENT DETAILS
15° SKEW - STEEL PILING

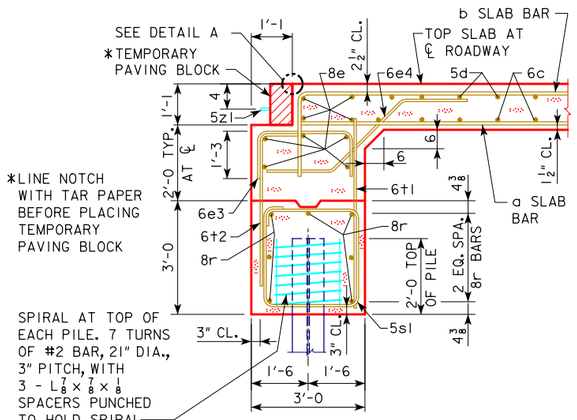
J30-35-06

REVISED 10-2013: REVISION FOR LRFD PILE DESIGN PU, STRENGTH LOADS IN TABLE.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).

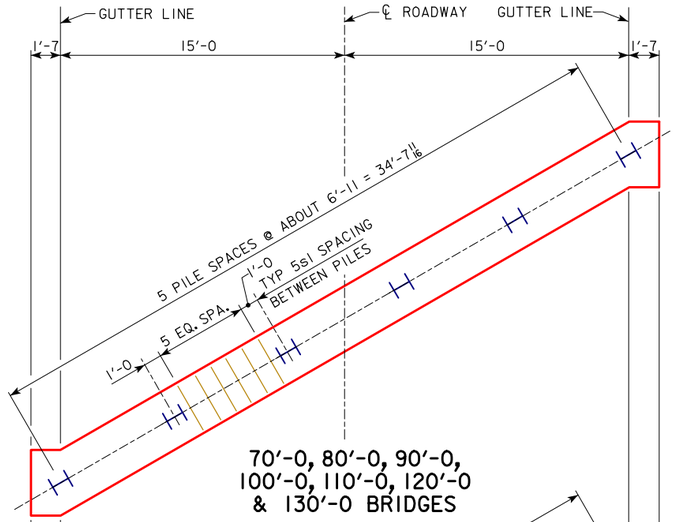


REAR ELEVATION

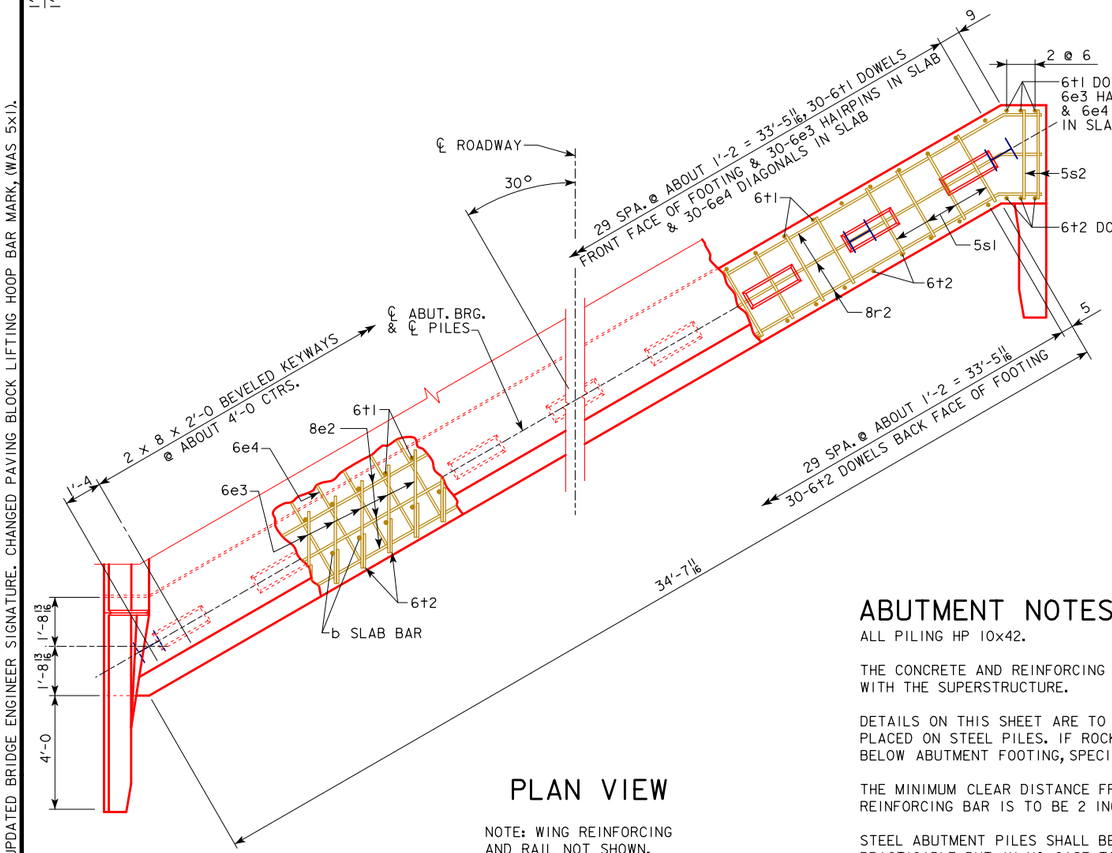
NOTE: THE BOTTOM OF FOOTING IS TO BE SLOPED TO COMPENSATE FOR GRADE ON THIS SKEWED ABUTMENT. THEREFORE BOTTOM OF FOOTING ELEVATIONS WILL BE REQUIRED AT EACH EXTERIOR PILE.



SECTION NORMAL TO ABUTMENT AT ℄



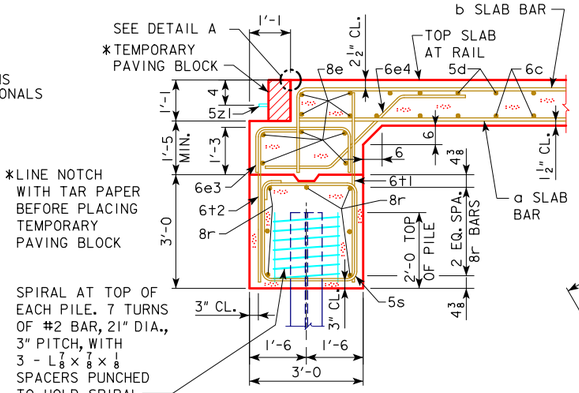
70'-0, 80'-0, 90'-0, 100'-0, 110'-0, 120'-0 & 130'-0 BRIDGES



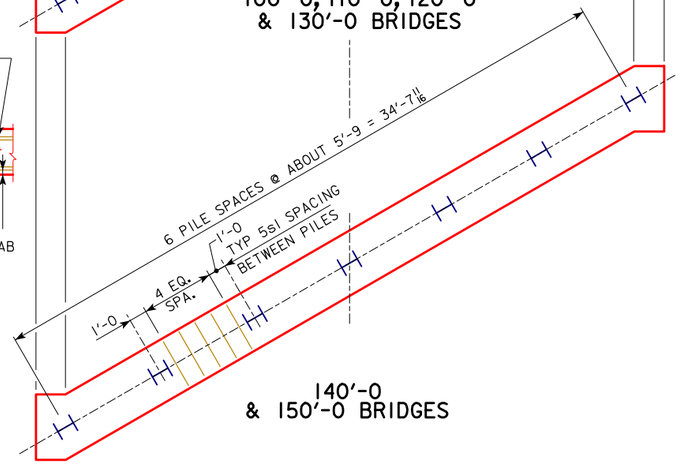
PLAN VIEW

NOTE: WING REINFORCING AND RAIL NOT SHOWN.

6e3, 6e4, AND 8e2 ARE INCLUDED WITH SUPERSTRUCTURE QUANTITIES.

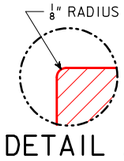


SECTION NORMAL TO ABUTMENT AT GUTTERLINE



140'-0 & 150'-0 BRIDGES

PILE PLAN - 30° SKEW STEEL PILING



DETAIL A

ABUTMENT NOTES:

ALL PILING HP 10x42.

THE CONCRETE AND REINFORCING STEEL FOR THE WINGS IS INCLUDED WITH THE SUPERSTRUCTURE.

DETAILS ON THIS SHEET ARE TO BE USED ONLY WHEN ABUTMENTS ARE PLACED ON STEEL PILES. IF ROCK IS ENCOUNTERED CLOSER THAN 12'-0 BELOW ABUTMENT FOOTING, SPECIAL ANALYSIS MAY BE REQUIRED.

THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

STEEL ABUTMENT PILES SHALL BE DRIVEN TO FULL PENETRATION IF PRACTICABLE BUT IN NO CASE TO A BEARING VALUE LESS THAN SHOWN IN DESIGN PLANS.

ALL REINFORCING STEEL IS TO BE GRADE 60.

ABUTMENT PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.

NUMBER OF PILES AND ABUTMENT DESIGN LOADS

BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
PILING - NUMBER	6	6	6	6	6	6	6	7	7
PU, STRENGTH I DESIGN LOAD - KIPS	393	418	442	472	501	535	567	Δ 663	Δ 701

Δ INCLUDES DYNAMIC LOAD ALLOWANCE

NOTE: PU, STRENGTH I DESIGN LOAD (KIPS) IS NOT THE VALUE USED IN THE FIELD FOR DRIVING PILES.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

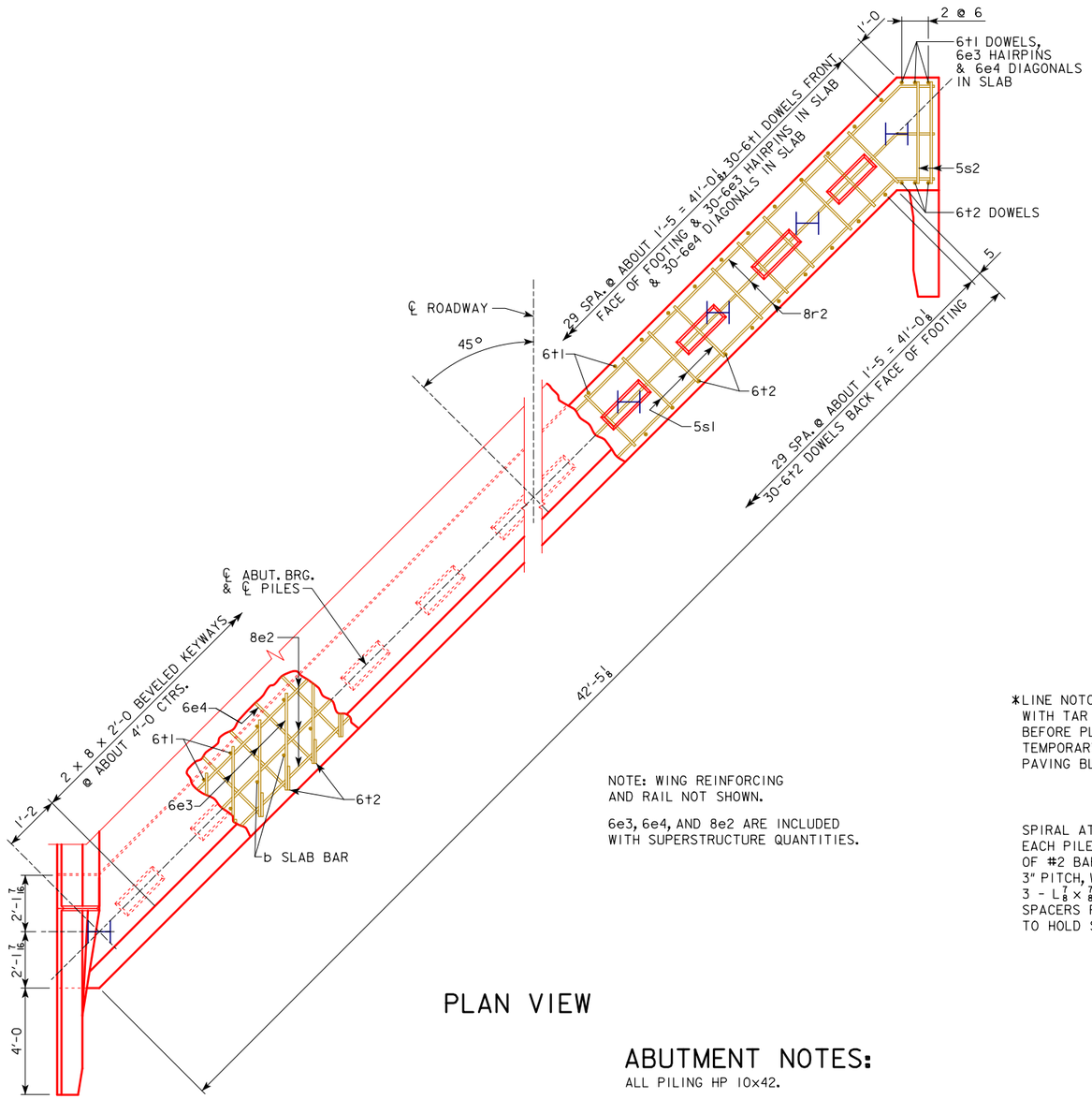
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

ABUTMENT DETAILS
30° SKEW - STEEL PILING

J30-36-06

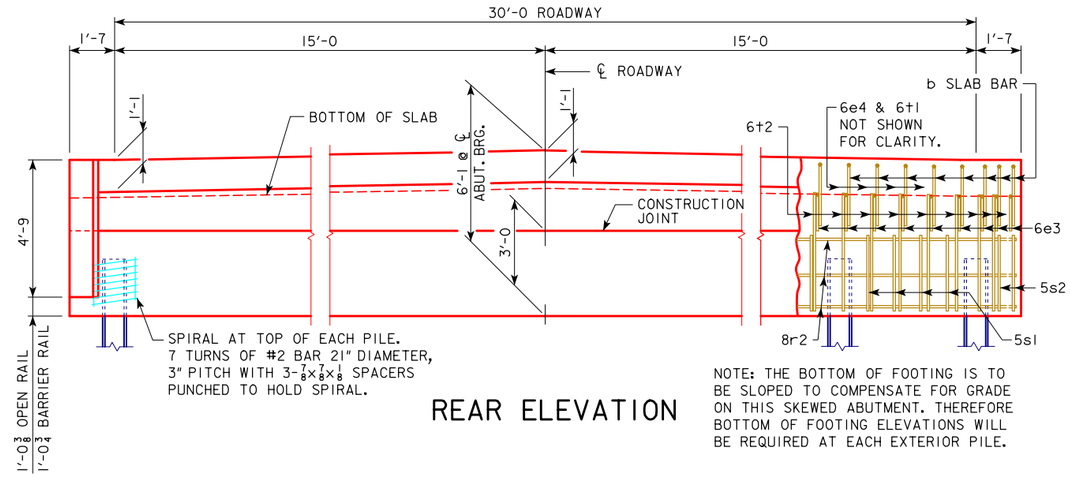
REVISED 06-2013: REVISION FOR LRFD PILE DESIGN.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).



PLAN VIEW

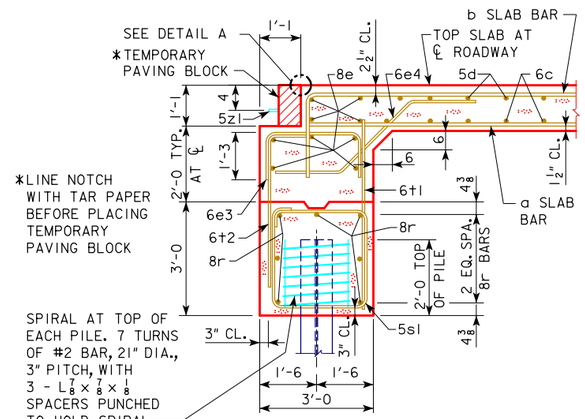
NOTE: WING REINFORCING AND RAIL NOT SHOWN.

6e3, 6e4, AND 8e2 ARE INCLUDED WITH SUPERSTRUCTURE QUANTITIES.

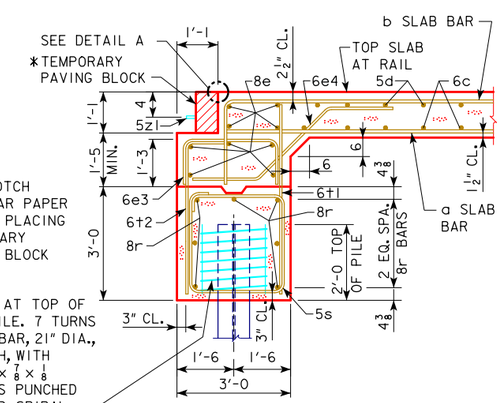


REAR ELEVATION

NOTE: THE BOTTOM OF FOOTING IS TO BE SLOPED TO COMPENSATE FOR GRADE ON THIS SKEWED ABUTMENT. THEREFORE BOTTOM OF FOOTING ELEVATIONS WILL BE REQUIRED AT EACH EXTERIOR PILE.



SECTION NORMAL TO ABUTMENT AT ℄



SECTION NORMAL TO ABUTMENT AT GUTTERLINE

ABUTMENT NOTES:

ALL PILING HP 10x42.

THE CONCRETE AND REINFORCING STEEL FOR THE WINGS IS INCLUDED WITH THE SUPERSTRUCTURE.

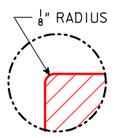
DETAILS ON THIS SHEET ARE TO BE USED ONLY WHEN ABUTMENTS ARE PLACED ON STEEL PILES. IF ROCK IS ENCOUNTERED CLOSER THAN 12'-0 BELOW ABUTMENT FOOTING, SPECIAL ANALYSIS MAY BE REQUIRED.

THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

STEEL ABUTMENT PILES SHALL BE DRIVEN TO FULL PENETRATION IF PRACTICABLE BUT IN NO CASE TO A BEARING VALUE LESS THAN SHOWN IN DESIGN PLANS.

ALL REINFORCING STEEL IS TO BE GRADE 60.

ABUTMENT PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.



DETAIL A

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

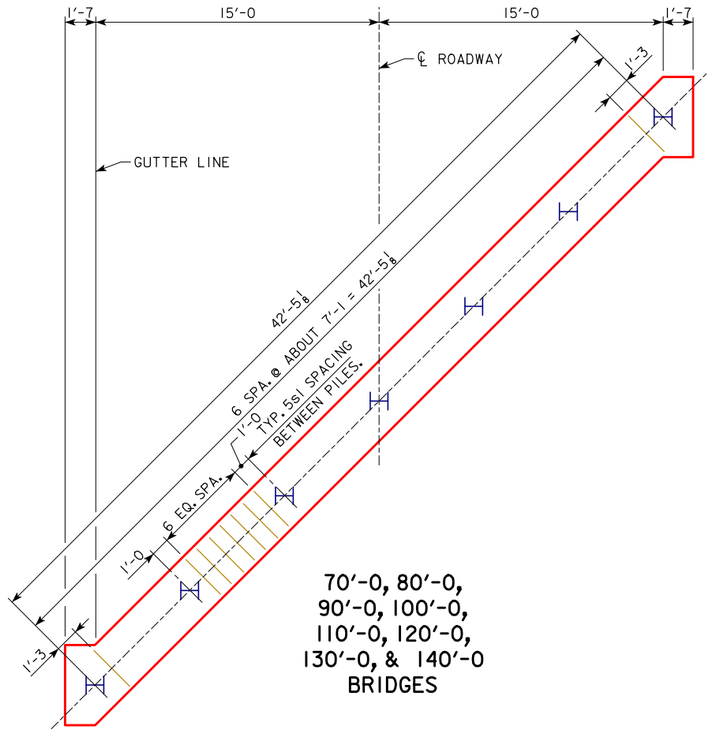
CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

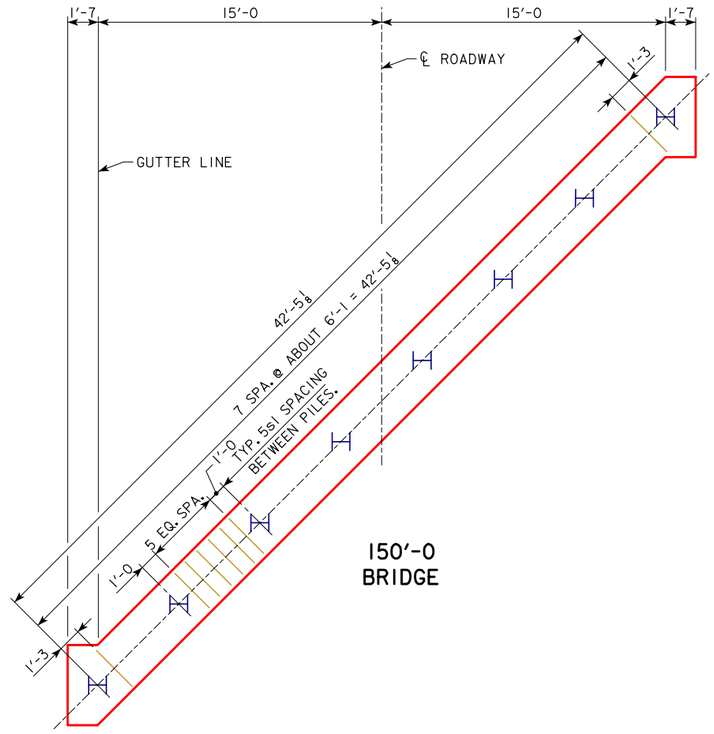
ABUTMENT DETAILS 45° SKEW - STEEL PILING

J30-37-06

REVISED 06-2013: REVISION FOR LRFD PILE DESIGN.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED PAVING BLOCK LIFTING HOOP BAR MARK, (WAS 5x1).



70'-0, 80'-0,
90'-0, 100'-0,
110'-0, 120'-0,
130'-0, & 140'-0
BRIDGES



150'-0
BRIDGE

NOTE:
ALL PILES ARE TO BE ORIENTED WITH WEBS PERPENDICULAR
TO THE ℄ OF THE ROADWAY AS SHOWN.

PILE PLAN - 45° SKEW
STEEL PILING

NOTE: ALL PILING HP 10x42.

NUMBER OF PILES AND ABUTMENT DESIGN LOADS

BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
PILING - NUMBER	7	7	7	7	7	7	7	7	8
PU, STRENGTH I DESIGN LOAD - KIPS	419	444	468	499	528	562	595	Δ 691	Δ 729

Δ INCLUDES DYNAMIC LOAD ALLOWANCE
NOTE: PU, STRENGTH I DESIGN LOAD (KIPS) IS NOT THE VALUE USED IN THE FIELD FOR DRIVING PILES.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

ABUTMENT DETAILS
45° SKEW - STEEL PILING

J30-38-06

REVISED 06-2013: REVISION FOR LRFD PILE DESIGN.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

BILL OF REINFORCING STEEL - ONE ABUTMENT - 0° SKEW

MARK	LOCATION	SHAPE	LENGTH	70'-0 NO.	70'-0 WEIGHT	80'-0 NO.	80'-0 WEIGHT	90'-0 NO.	90'-0 WEIGHT	100'-0 NO.	100'-0 WEIGHT	110'-0 NO.	110'-0 WEIGHT	120'-0 NO.	120'-0 WEIGHT	130'-0 NO.	130'-0 WEIGHT	140'-0 NO.	140'-0 WEIGHT	150'-0 NO.	150'-0 WEIGHT
8r1	ABUTMENT FOOTING LONGITUDINAL		32'-10	7	614	7	614	7	614	7	614	7	614	7	614	7	614	7	614	7	614
5s1	ABUTMENT FOOTING HOOPS		11'-0	28	321	28	321	28	321	28	321	28	321	29	333	29	333	28	321	28	321
6t1	FOOTING TO SLAB DOWELS		5'-0	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270
6t2	FOOTING TO SLAB DOWELS		5'-7	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302
#2	PILE SPIRAL		38'-6	5	32	5	32	5	32	5	32	5	32	6	39	6	39	7	45	7	45
	SPIRAL SPACERS - L $\frac{7}{8}$ X $\frac{7}{8}$ X $\frac{1}{8}$ X 0.70		1'-10	15	19	15	19	15	19	15	19	15	19	18	23	18	23	21	27	21	27
	REINFORCING STEEL - TOTAL (LBS.)				1558		1558		1558		1558		1558		1581		1581		1579		1579

BILL OF REINFORCING STEEL - ONE ABUTMENT - 15° SKEW

MARK	LOCATION	SHAPE	LENGTH	70'-0 NO.	70'-0 WEIGHT	80'-0 NO.	80'-0 WEIGHT	90'-0 NO.	90'-0 WEIGHT	100'-0 NO.	100'-0 WEIGHT	110'-0 NO.	110'-0 WEIGHT	120'-0 NO.	120'-0 WEIGHT	130'-0 NO.	130'-0 WEIGHT	140'-0 NO.	140'-0 WEIGHT	150'-0 NO.	150'-0 WEIGHT
8r2	ABUTMENT FOOTING LONGITUDINAL		33'-11	7	634	7	634	7	634	7	634	7	634	7	634	7	634	7	634	7	634
5s1	ABUTMENT FOOTING HOOPS		11'-0	24	275	24	275	24	275	24	275	24	275	25	287	25	287	24	275	24	275
5s2	ABUTMENT FOOTING HOOPS		11'-3	4	47	4	47	4	47	4	47	4	47	4	47	4	47	4	47	4	47
6t1	FOOTING TO SLAB DOWELS		5'-0	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270
6t2	FOOTING TO SLAB DOWELS		5'-7	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302
#2	PILE SPIRAL		38'-6	5	32	5	32	5	32	5	32	5	32	6	39	6	39	7	45	7	45
	SPIRAL SPACERS - L $\frac{7}{8}$ X $\frac{7}{8}$ X $\frac{1}{8}$ X 0.70		1'-10	15	19	15	19	15	19	15	19	15	19	18	23	18	23	21	27	21	27
	REINFORCING STEEL - TOTAL (LBS.)				1579		1579		1579		1579		1579		1602		1602		1600		1600

BILL OF REINFORCING STEEL - ONE ABUTMENT - 30° SKEW

MARK	LOCATION	SHAPE	LENGTH	70'-0 NO.	70'-0 WEIGHT	80'-0 NO.	80'-0 WEIGHT	90'-0 NO.	90'-0 WEIGHT	100'-0 NO.	100'-0 WEIGHT	110'-0 NO.	110'-0 WEIGHT	120'-0 NO.	120'-0 WEIGHT	130'-0 NO.	130'-0 WEIGHT	140'-0 NO.	140'-0 WEIGHT	150'-0 NO.	150'-0 WEIGHT
8r2	ABUTMENT FOOTING LONGITUDINAL		37'-6	7	701	7	701	7	701	7	701	7	701	7	701	7	701	7	701	7	701
5s1	ABUTMENT FOOTING HOOPS		11'-0	30	344	30	344	30	344	30	344	30	344	30	344	30	344	30	344	30	344
5s2	ABUTMENT FOOTING HOOPS		11'-11	4	50	4	50	4	50	4	50	4	50	4	50	4	50	4	50	4	50
6t1	FOOTING TO SLAB DOWELS		5'-0	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270
6t2	FOOTING TO SLAB DOWELS		5'-7	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302
#2	PILE SPIRAL		38'-6	6	39	6	39	6	39	6	39	6	39	6	39	6	39	7	45	7	45
	SPIRAL SPACERS - L $\frac{7}{8}$ X $\frac{7}{8}$ X $\frac{1}{8}$ X 0.70		1'-10	18	23	18	23	18	23	18	23	18	23	18	23	18	23	21	27	21	27
	REINFORCING STEEL - TOTAL (LBS.)				1729		1729		1729		1729		1729		1729		1729		1739		1739

BILL OF REINFORCING STEEL - ONE ABUTMENT - 45° SKEW

MARK	LOCATION	SHAPE	LENGTH	70'-0 NO.	70'-0 WEIGHT	80'-0 NO.	80'-0 WEIGHT	90'-0 NO.	90'-0 WEIGHT	100'-0 NO.	100'-0 WEIGHT	110'-0 NO.	110'-0 WEIGHT	120'-0 NO.	120'-0 WEIGHT	130'-0 NO.	130'-0 WEIGHT	140'-0 NO.	140'-0 WEIGHT	150'-0 NO.	150'-0 WEIGHT
8r2	ABUTMENT FOOTING LONGITUDINAL		45'-3	7	846	7	846	7	846	7	846	7	846	7	846	7	846	7	846	7	846
5s1	ABUTMENT FOOTING HOOPS		11'-0	42	482	42	482	42	482	42	482	42	482	42	482	42	482	42	482	42	482
5s2	ABUTMENT FOOTING HOOPS		13'-6	4	56	4	56	4	56	4	56	4	56	4	56	4	56	4	56	4	56
6t1	FOOTING TO SLAB DOWELS		5'-0	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270	36	270
6t2	FOOTING TO SLAB DOWELS		5'-7	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302	36	302
#2	PILE SPIRAL		38'-6	7	45	7	45	7	45	7	45	7	45	7	45	7	45	7	45	8	51
	SPIRAL SPACERS - L $\frac{7}{8}$ X $\frac{7}{8}$ X $\frac{1}{8}$ X 0.70		1'-10	21	27	21	27	21	27	21	27	21	27	21	27	21	27	21	27	24	31
	REINFORCING STEEL - TOTAL (LBS.)				2028		2028		2028		2028		2028		2028		2028		2028		2038

NOTE: THE PILE SPIRALS AND SPIRAL SPACERS ARE TO BE NON-COATED REINFORCING BUT MAY BE EPOXY COATED AT THE CONTRACTORS OPTION AND EXPENSE.

ESTIMATED QUANTITIES - ONE ABUT. - 0° SKEW

LOCATION	UNIT	QUANTITY								
BRIDGE LENGTH		70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
REINFORCING STEEL	LBS.	1558	1558	1558	1558	1558	1581	1581	1579	1579
STEEL PILING HP 10x42	NO.	5	5	5	5	5	6	6	7	7
PREBORE HOLES	FT.	-	-	-	-	-	-	-	70	70

ESTIMATED QUANTITIES - ONE ABUT. - 15° SKEW

LOCATION	UNIT	QUANTITY								
BRIDGE LENGTH		70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
REINFORCING STEEL	LBS.	1579	1579	1579	1579	1579	1602	1602	1600	1600
STEEL PILING HP 10x42	NO.	5	5	5	5	5	6	6	7	7
PREBORE HOLES	FT.	-	-	-	-	-	-	-	70	70

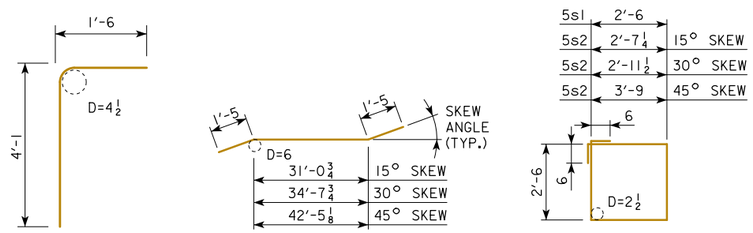
ESTIMATED QUANTITIES - ONE ABUT. - 30° SKEW

LOCATION	UNIT	QUANTITY								
BRIDGE LENGTH		70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
REINFORCING STEEL	LBS.	1729	1729	1729	1729	1729	1729	1729	1739	1739
STEEL PILING HP 10x42	NO.	6	6	6	6	6	6	6	7	7
PREBORE HOLES	FT.	-	-	-	-	-	-	-	70	70

ESTIMATED QUANTITIES - ONE ABUT. - 45° SKEW

LOCATION	UNIT	QUANTITY								
BRIDGE LENGTH		70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
REINFORCING STEEL	LBS.	2028	2028	2028	2028	2028	2028	2028	2028	2038
STEEL PILING HP 10x42	NO.	7	7	7	7	7	7	7	7	8
PREBORE HOLES	FT.	-	-	-	-	-	-	-	70	80

BENT BAR DETAILS



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

REVISED 07-2009: CONCRETE QUANTITIES CHANGED.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

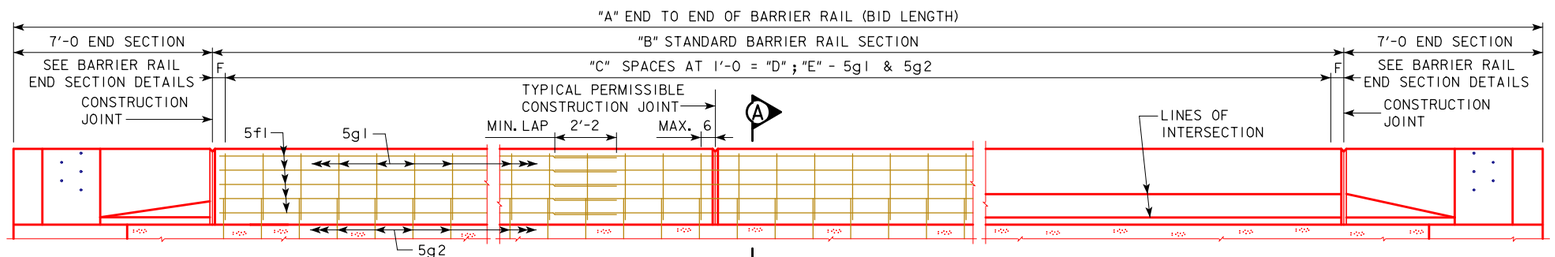
NOVEMBER, 2006

ABUTMENT DETAILS
STEEL PILING

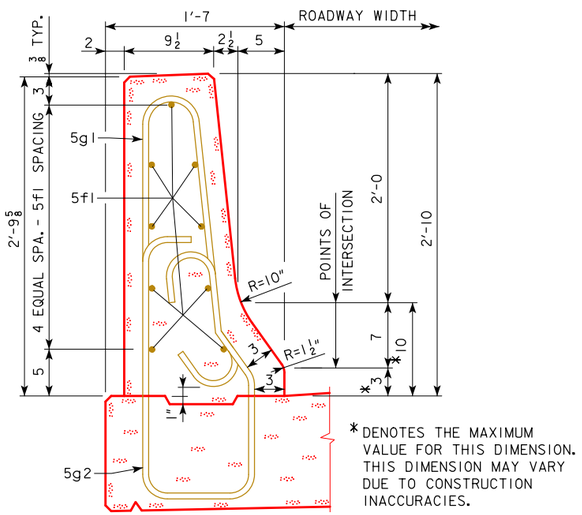
J30-39-06

TABLE OF BARRIER RAIL DIMENSIONS AND NUMBERS

	BRIDGE LENGTH	70′-0				80′-0				90′-0				100′-0				110′-0				120′-0				130′-0				140′-0				150′-0			
	SKEW	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°
DIMENSION OR NUMBER	A (FT.-IN.)	81′-0	81′-1 1/4	81′-5 1/2	82′-3	91′-0	91′-1 1/4	91′-5 1/2	92′-3	101′-0	101′-1 1/4	101′-5 1/2	102′-3	111′-0	111′-1 1/4	111′-5 1/2	112′-3	121′-0	121′-1 1/4	121′-5 1/2	122′-3	131′-0	131′-1 1/4	131′-5 1/2	132′-3	141′-0	141′-1 1/4	141′-5 1/2	142′-3	151′-0	151′-1 1/4	151′-5 1/2	152′-3	161′-0	161′-1 1/4	161′-5 1/2	162′-3
	B (FT.-IN.)	67′-0	67′-1 1/4	67′-5 1/2	68′-3	77′-0	77′-1 1/4	77′-5 1/2	78′-3	87′-0	87′-1 1/4	87′-5 1/2	88′-3	97′-0	97′-1 1/4	97′-5 1/2	98′-3	107′-0	107′-1 1/4	107′-5 1/2	108′-3	117′-0	117′-1 1/4	117′-5 1/2	118′-3	127′-0	127′-1 1/4	127′-5 1/2	128′-3	137′-0	137′-1 1/4	137′-5 1/2	138′-3	147′-0	147′-1 1/4	147′-5 1/2	148′-3
	C	66	66	66	67	76	76	76	77	86	86	86	87	96	96	96	97	106	106	106	107	116	116	116	117	126	126	126	127	136	136	136	137	146	146	146	147
	D (FT.-IN.)	66′-0	66′-0	66′-0	67′-0	76′-0	76′-0	76′-0	77′-0	86′-0	86′-0	86′-0	87′-0	96′-0	96′-0	96′-0	97′-0	106′-0	106′-0	106′-0	107′-0	116′-0	116′-0	116′-0	117′-0	126′-0	126′-0	126′-0	127′-0	136′-0	136′-0	136′-0	137′-0	146′-0	146′-0	146′-0	147′-0
	E	67	67	67	68	77	77	77	78	87	87	87	88	97	97	97	98	107	107	107	108	117	117	117	118	127	127	127	128	137	137	137	138	147	147	147	148
	F (IN.)	6	6 5/8	8 3/4	7 1/2	6	6 5/8	8 3/4	7 1/2	6	6 5/8	8 3/4	7 1/2	6	6 5/8	8 3/4	7 1/2	6	6 5/8	8 3/4	7 1/2	6	6 5/8	8 3/4	7 1/2	6	6 5/8	8 3/4	7 1/2	6	6 5/8	8 3/4	7 1/2	6	6 5/8	8 3/4	7 1/2

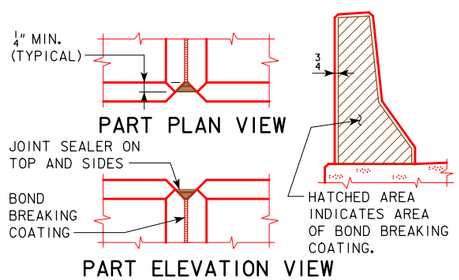


ELEVATION OF BARRIER RAIL



* DENOTES THE MAXIMUM VALUE FOR THIS DIMENSION. THIS DIMENSION MAY VARY DUE TO CONSTRUCTION INACCURACIES.

PART SECTION A-A



BARRIER RAIL JOINT DETAILS

BARRIER RAIL NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

THE PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE PLACED BETWEEN VERTICAL BARS AT A MINIMUM SPACING OF 20 FEET. CONSTRUCTION JOINT CONTACT SURFACES ARE TO BE COATED WITH AN APPROVED BOND BREAKER.

COST OF THE JOINT SEALER AND BOND BREAKER SHALL BE CONSIDERED INCIDENTAL TO OTHER CONSTRUCTION.

THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAL FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR "CONCRETE BARRIER RAILING" SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.

IF CONDUIT IS REQUIRED IN THIS PLAN THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.

THE JOINT SEALER SHALL BE LIGHT GRAY NONSAG LATEX CAULKING SEALER MARKETED FOR OUTDOOR USE. NO TESTING OR CERTIFICATION IS REQUIRED.

TOP OF THE BARRIER RAIL IS TO BE PARALLEL TO THE THEORETICAL ℄ GRADE.

CROSS SECTIONAL AREA OF THE STANDARD SECTION OF THE BARRIER RAIL = 2.84 SQUARE FEET.

IF PLANS SPECIFY THAT THE REINFORCING STEEL IN THE SLAB BE EPOXY COATED, ALL BARRIER RAIL REINFORCING SHALL ALSO BE EPOXY COATED. OTHERWISE THE BARRIER RAIL REINFORCING SHALL NOT BE EPOXY COATED.

CONCRETE BARRIER RAILS PLACED USING THE SLIPFORM METHOD WILL REQUIRE THE USE OF A CLASS BR CONCRETE IN ACCORDANCE WITH ARTICLE 2513.03, A, 2, OF THE STANDARD SPECIFICATIONS. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. CLASS D CONCRETE IS NOT PERMITTED FOR CONCRETE BARRIER RAILS (CAST-IN-PLACE OR SLIPFORMED METHOD).

REVISED 07-2009: BR CONCRETE ARTICLE NUIMBER CHANGED.
REVISED 07-2016: REMOVED BARRIER RAIL NOTE STATING "ALL BARRIER RAIL REINFORCING STEEL IS TO BE INCLUDED WITH THE SUPERSTRUCTURE REINFORCING STEEL."
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30′ ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

BARRIER RAIL DETAILS

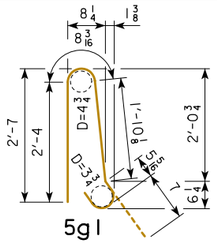
J30-40-06

EPOXY REINFORCING STEEL-TWO BARRIER RAILS

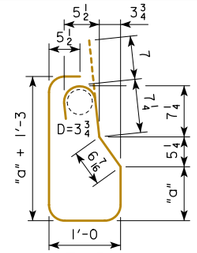
BRIDGE LENGTH				70′-0			80′-0			90′-0			100′-0			110′-0			120′-0			130′-0			140′-0			150′-0		
SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
STANDARD SECTION	5g1	VERTICAL		136	5′-11	839	156	5′-11	963	176	5′-11	1086	196	5′-11	1210	216	5′-11	1333	236	5′-11	1456	256	5′-11	1580	276	5′-11	1703	296	5′-11	1827
	5g2	VERTICAL		136	6′-10	969	156	6′-11	1125	176	7′-1	1300	196	7′-4	1499	216	7′-6	1690	236	7′-9	1908	256	7′-11	2114	276	8′-2	2351	296	8′-5	2598
	5f1	LONGITUDINAL		36	35′-1	1317	54	27′-5	1544	54	30′-9	1732	54	34′-1	1920	54	37′-5	2107	72	31′-2	2340	72	33′-8	2528	72	36′-2	2716	72	38′-8	2904
		4 END SECTIONS @ 458 LBS.				1832			1832			1832			1832			1832			1832			1832			1832			1832
(INCLUDE WITH SUPERSTRUCTURE REINFORCING)				TOTAL (LBS.)		4957	TOTAL (LBS.)		5464	TOTAL (LBS.)		5950	TOTAL (LBS.)		6461	TOTAL (LBS.)		6962	TOTAL (LBS.)		7536	TOTAL (LBS.)		8054	TOTAL (LBS.)		8602	TOTAL (LBS.)		9161

REINFORCING QUANTITIES SHOWN ARE BASED ON 45° SKEW BID LENGTHS.

BENT BAR DETAILS



5g1



5g2

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

5g2 BARS		
BRIDGE	"a"	LENGTH
70′	1′-2	6′-10
80′	1′-2 3/4	6′-11
90′	1′-3 3/4	7′-1
100′	1′-5	7′-4
110′	1′-6	7′-6
120′	1′-7 1/2	7′-9
130′	1′-8 3/4	7′-11
140′	1′-10	8′-2
150′	1′-11 1/2	8′-5

CONCRETE PLACEMENT SUMMARY

BRIDGE LENGTH	70′-0	80′-0	90′-0	100′-0	110′-0	120′-0	130′-0	140′-0	150′-0
STANDARD SECTION * 2 × B @ 0.1052 CU. YDS. PER FT.	14.4	16.5	18.6	20.7	22.8	24.9	27.0	29.1	31.2
END SECTION 4 @ 0.65 CU. YDS.	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
TOTAL (CU. YDS.)	17.0	19.1	21.2	23.3	25.4	27.5	29.6	31.7	33.8

* SEE J30-40-06 FOR DIMENSION "B".
CONCRETE QUANTITIES SHOWN ARE BASED ON 45° SKEW BID LENGTHS.

CONCRETE BARRIER RAIL QUANTITIES

BRIDGE LENGTH		UNIT	70′-0	80′-0	90′-0	100′-0	110′-0	120′-0	130′-0	140′-0	150′-0
CONCRETE BARRIER RAILING	0° SKEW	L.F.	162.0	182.0	202.0	222.0	242.0	262.0	282.0	302.0	322.0
CONCRETE BARRIER RAILING	15° SKEW	L.F.	162.2	182.2	202.2	222.2	242.2	262.2	282.2	302.2	322.2
CONCRETE BARRIER RAILING	30° SKEW	L.F.	162.9	182.9	202.9	222.9	242.9	262.9	282.9	302.9	322.9
CONCRETE BARRIER RAILING	45° SKEW	L.F.	164.5	184.5	204.5	224.5	244.5	264.5	284.5	304.5	324.5

REVISED 07-2009: WEIGHT OF END SECTIONS CHANGED AND IS REFLECTED IN TOTAL WEIGHT.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

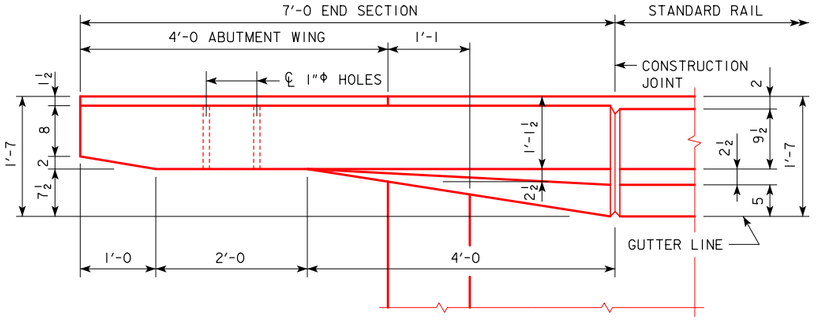
STANDARD DESIGN - 30′ ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

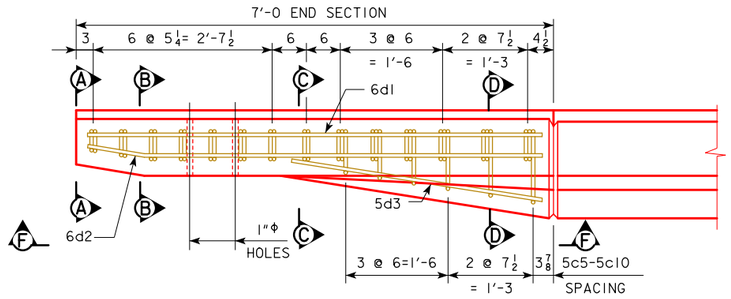
NOVEMBER, 2006

BARRIER RAIL DETAILS

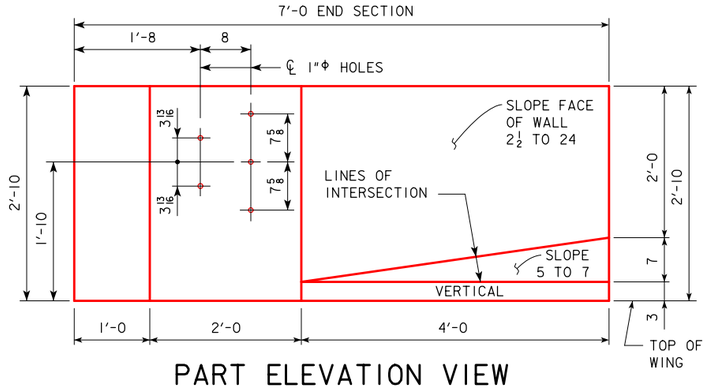
J30-41-06



PART PLAN VIEW

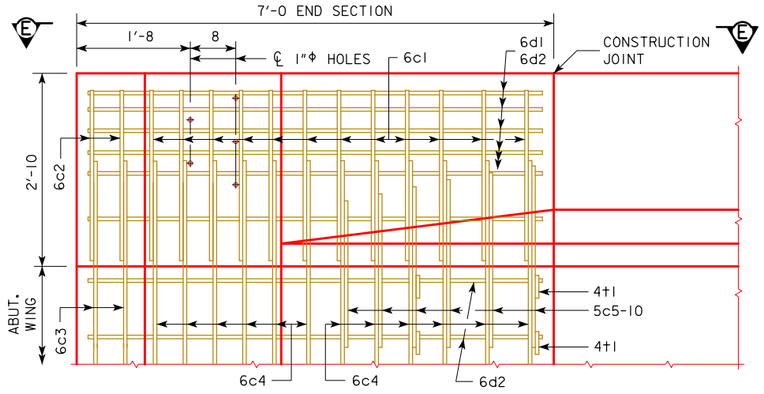


PART VIEW E-E

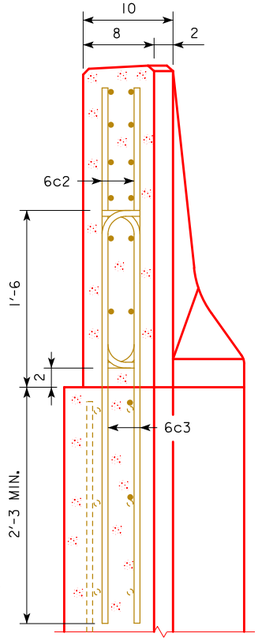


PART ELEVATION VIEW

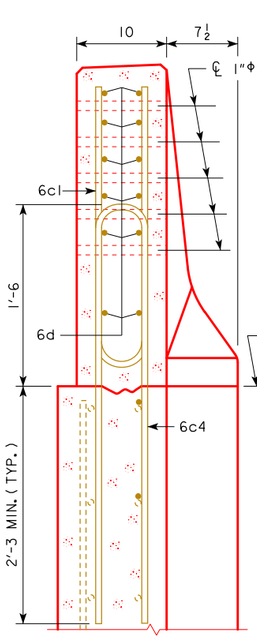
PROVIDE 5 HOLES FORMED WITH 1"Φ PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE BID FOR CONCRETE BARRIER RAILING.



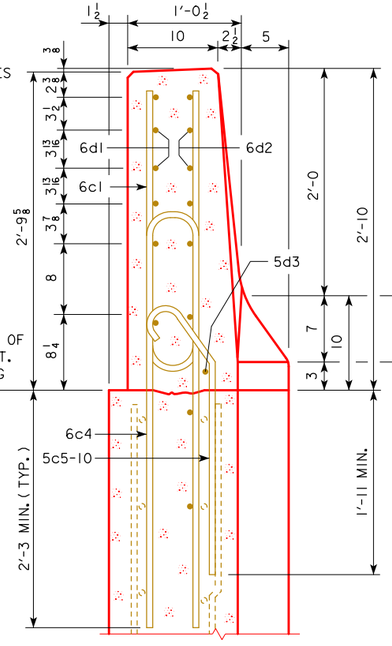
PART VIEW F-F



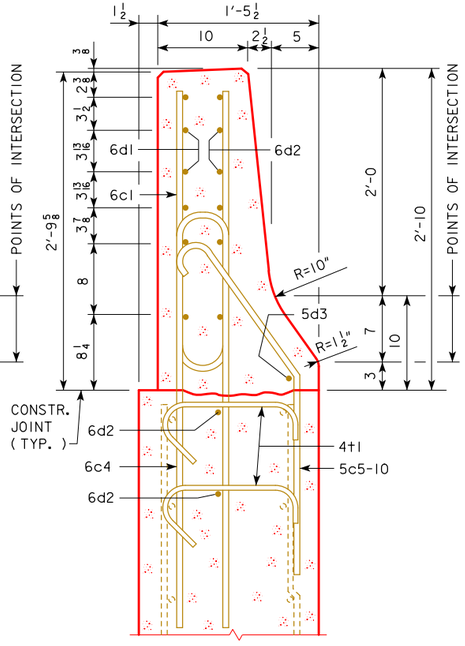
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTE:
4t1 PLACEMENT- 2 BARS EACH LEVEL OF 6d2 IN WING FOOTING.

NOTE:
CONSTRUCTION JOINT BETWEEN TOP OF WING AND BARRIER RAIL IS ROUGHENED CONCRETE.

NOTE:
THE 10" RADIUS AND 1½" RADIUS ARE TYPICAL AND SHALL BE USED WHEN CONSTRUCTING THE CORNERS FOR SECTION A-A, SECTION B-B, SECTION C-C AND SECTION D-D.

NOTE:
THE 6c4, 6c3, 5c5-10, 2 - 6d2 AND 4t1 BARS ARE TO BE PLACED WITH THE ABUTMENT WING. THE DETAILS FOR PLACEMENT ARE SHOWN ON THE WING ABUTMENT SHEET.

NOTE:
DASHED LINES BELOW THE TOP OF WING ARE THE ABUTMENT WING REINFORCING STEEL. SEE WING ABUTMENT SHEET FOR PLACEMENT.

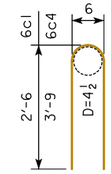
EPOXY REINFORCING STEEL - ONE END SECTION

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	VERTICAL		12	5'-6	99
6c2	VERTICAL		4	2'-10	17
6c3	VERTICAL		4	4'-1	25
6c4	VERTICAL		12	8'-0	144
5c5-10	VERTICAL		6	VARIES	23
6d1	HORIZONTAL		6	6'-8	60
6d2	HORIZONTAL		8	6'-9	81
5d3	HORIZONTAL		1	3'-9	4
4t1	ABUTMENT WING TIE BARS		4	VARIES	5
(INCLUDE WITH BARRIER RAIL REINFORCING)		TOTAL WEIGHT (LBS.)			458

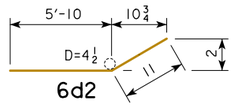
CONCRETE PLACEMENT SUMMARY

SECTION	TOTAL
BARRIER RAIL ONE END SECTION	0.65 CU. YD.

BENT BAR DETAILS

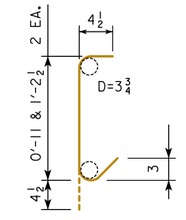


6c1 & 6c4

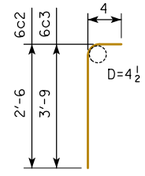


6d2

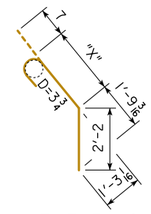
BAR	"X"
5c5	0'-6½
5c6	0'-8½
5c7	0'-10¼
5c8	1'-0¼
5c9	1'-2
5c10	1'-4



4t1



6c2 & 6c3



5c5-5c10

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

REVISED 07-2009: CHANGED SHAPE OF 5c5-5c10 BARS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED SECTION A-A (WAS VIEW A-A).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

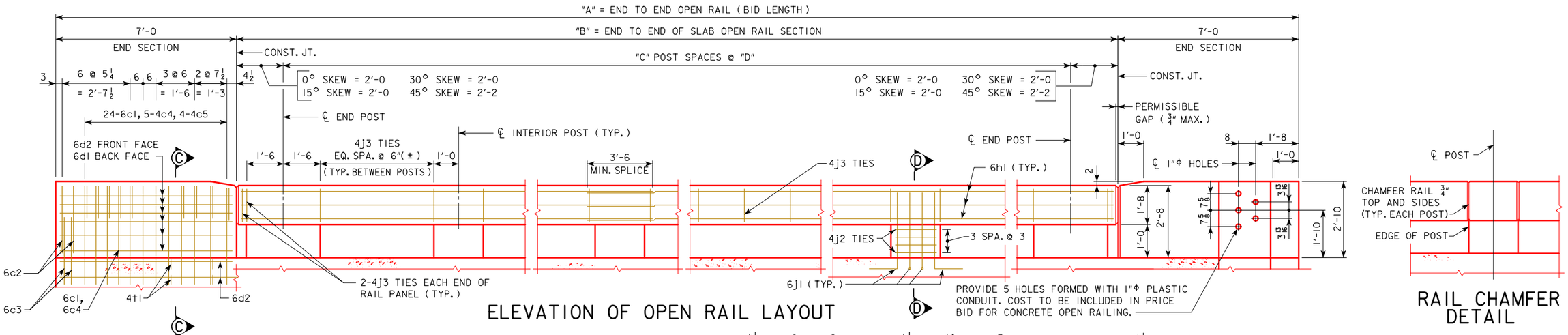
NOVEMBER, 2006

BARRIER RAIL END SECTION

J30-42-06

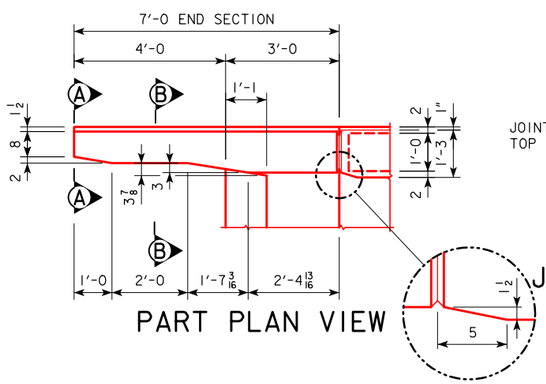
TABLE OF OPEN RAIL DIMENSIONS AND NUMBERS

℄-℄ ABUT. BRG		70′-0				80′-0				90′-0				100′-0				110′-0				120′-0				130′-0				140′-0				150′-0			
SKEW		0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°
DIMENSION OR NUMBER	A (FT.-IN.)	81′-0	81′-1¼	81′-5½	82′-3	91′-0	91′-1¼	91′-5½	92′-3	101′-0	101′-1¼	101′-5½	102′-3	111′-0	111′-1¼	111′-5½	112′-3	121′-0	121′-1¼	121′-5½	122′-3	131′-0	131′-1¼	131′-5½	132′-3	141′-0	141′-1¼	141′-5½	142′-3	151′-0	151′-1¼	151′-5½	152′-3	161′-0	161′-1¼	161′-5½	162′-3
	B (FT.-IN.)	67′-0	67′-1¼	67′-5½	68′-3	77′-0	77′-1¼	77′-5½	78′-3	87′-0	87′-1¼	87′-5½	88′-3	97′-0	97′-1¼	97′-5½	98′-3	107′-0	107′-1¼	107′-5½	108′-3	117′-0	117′-1¼	117′-5½	118′-3	127′-0	127′-1¼	127′-5½	128′-3	137′-0	137′-1¼	137′-5½	138′-3	147′-0	147′-1¼	147′-5½	148′-3
	C	8	8	8	8	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	15	15	15	15	16	16	16	16	17	17	17	17	18	18	18	18
	D (FT.-IN.)	7′-10½	7′-10 11/16	7′-11 3/16	7′-11 7/8	7′-3 5/8	7′-3¾	7′-4 3/16	7′-4 11/16	7′-6 9/16	7′-6 11/16	7′-7 1/16	7′-7 9/16	7′-9	7′-9⅛	7′-9 7/16	7′-9 15/16	7′-11 1/16	7′-11 3/16	7′-11½	7′-11 15/16	7′-6⅜	7′-6½	7′-6¾	7′-7⅛	7′-8¼	7′-8 5/16	7′-8⅝	7′-8 15/16	7′-9⅞	7′-9 15/16	7′-10 3/16	7′-10½	7′-11 5/16	7′-11⅜	7′-11⅝	7′-11 15/16

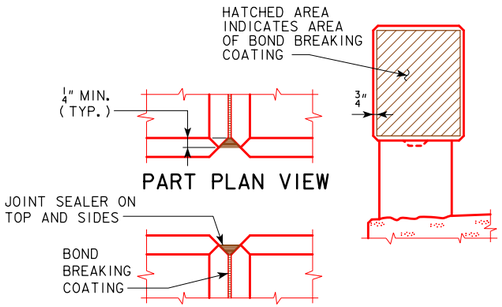


ELEVATION OF OPEN RAIL LAYOUT

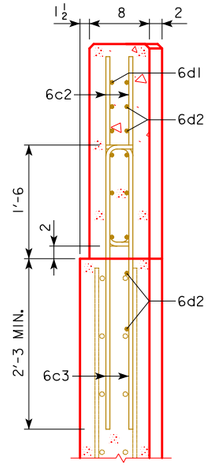
RAIL CHAMFER DETAIL



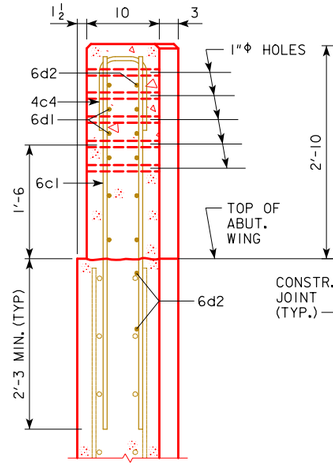
PART PLAN VIEW



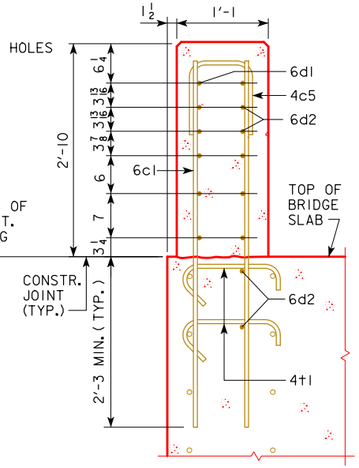
JOINT DETAILS AT END SECTION



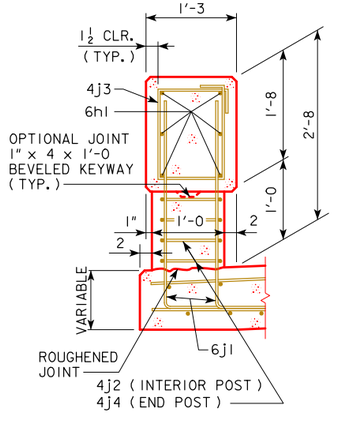
SECTION A-A



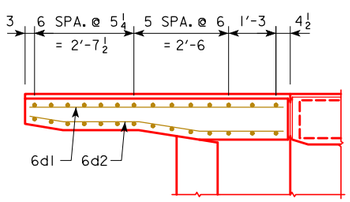
SECTION B-B



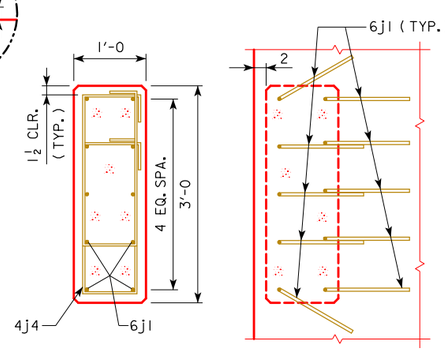
SECTION C-C



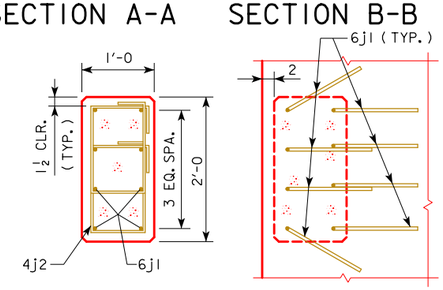
PART SECTION D-D



PART PLAN SECTION



END POST DETAILS (REQUIRED AT ENDS OF OPEN RAIL)



INTERIOR POST DETAILS

REVISED 12-2008: REVISED END SECTION SHAPE AND REINFORCEMENT. RAIL DEPTH CHANGED TO 1′-8.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE. CHANGED SECTION A-A (WAS VIEW A-A).

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

STANDARD DESIGN - 30′ ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

OPEN RAIL DETAILS (TL-4)

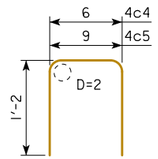
J30-43-06

EPOXY REINFORCING STEEL-TWO OPEN RAILS

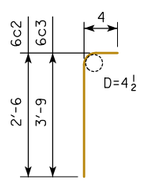
BRIDGE LENGTH			70′-0			80′-0			90′-0			100′-0			110′-0			120′-0			130′-0			140′-0			150′-0		
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
6c1	VERTICAL		96	4′-11	709	96	4′-11	709	96	4′-11	709	96	4′-11	709	96	4′-11	709	96	4′-11	709	96	4′-11	709	96	4′-11	709	96	4′-11	709
6c2	VERTICAL		16	2′-10	68	16	2′-10	68	16	2′-10	68	16	2′-10	68	16	2′-10	68	16	2′-10	68	16	2′-10	68	16	2′-10	68	16	2′-10	68
6c3	VERTICAL		16	4′-1	98	16	4′-1	98	16	4′-1	98	16	4′-1	98	16	4′-1	98	16	4′-1	98	16	4′-1	98	16	4′-1	98	16	4′-1	98
4c4	VERTICAL HOOPS		20	2′-10	38	20	2′-10	38	20	2′-10	38	20	2′-10	38	20	2′-10	38	20	2′-10	38	20	2′-10	38	20	2′-10	38	20	2′-10	38
4c5	VERTICAL HOOPS		16	3′-1	33	16	3′-1	33	16	3′-1	33	16	3′-1	33	16	3′-1	33	16	3′-1	33	16	3′-1	33	16	3′-1	33	16	3′-1	33
6d1	HORIZONTAL		24	6′-8	240	24	6′-8	240	24	6′-8	240	24	6′-8	240	24	6′-8	240	24	6′-8	240	24	6′-8	240	24	6′-8	240	24	6′-8	240
6d2	HORIZONTAL		32	6′-9	324	32	6′-9	324	32	6′-9	324	32	6′-9	324	32	6′-9	324	32	6′-9	324	32	6′-9	324	32	6′-9	324	32	6′-9	324
6h1	LONGITUDINAL OPEN RAIL		24	35′-9	1289	36	28′-4	1532	36	31′-8	1712	36	35′-0	1893	36	38′-4	2073	48	32′-2	2319	48	34′-8	2499	48	37′-2	2680	60	32′-5	2921
6j1	VERTICAL DOWELS OPEN RAIL		152	4′-6	1027	184	4′-7	1267	200	4′-8	1402	216	4′-9	1541	232	4′-10	1684	264	4′-11	1950	280	5′-1	2138	296	5′-2	2297	312	5′-3	2460
4j2	HOOPS INTERIOR POSTS		112	4′-8	349	144	4′-8	449	160	4′-8	499	176	4′-8	549	192	4′-8	599	224	4′-8	698	240	4′-8	748	256	4′-8	798	272	4′-8	848
4j3	HOOPS OPEN RAIL		212	5′-5	767	244	5′-5	883	290	5′-5	1049	316	5′-5	1143	342	5′-5	1237	394	5′-5	1426	420	5′-5	1520	446	5′-5	1614	472	5′-5	1708
4j4	HOOPS END POSTS		32	6′-5	137	32	6′-5	137	32	6′-5	137	32	6′-5	137	32	6′-5	137	32	6′-5	137	32	6′-5	137	32	6′-5	137	32	6′-5	137
4t1	WING FOOTING TIE BARS		16	VARIES	21	16	VARIES	21	16	VARIES	21	16	VARIES	21	16	VARIES	21	16	VARIES	21	16	VARIES	21	16	VARIES	21	16	VARIES	21
(INCLUDE WITH SUPERSTRUCTURE REINFORCING)		TOTAL (LBS.)			5100			5799			6330			6794			7261			8061			8573			9057			9605

REINFORCING QUANTITIES SHOWN ARE BASED ON 45° SKEW BID LENGTHS.

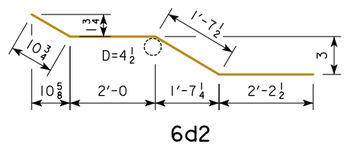
BENT BAR DETAILS



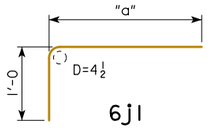
4c4 & 4c5



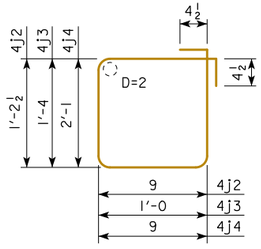
6c2 & 6c3



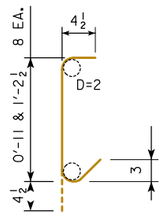
6d2



6j1



4j2, 4j3, 4j4



4t1

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

6j1 BARS		
BRIDGE	"a"	LENGTH
70′	3′-6	4′-6
80′	3′-7	4′-7
90′	3′-8	4′-8
100′	3′-9	4′-9
110′	3′-10	4′-10
120′	3′-11	4′-11
130′	4′-1	5′-1
140′	4′-2	5′-2
150′	4′-3	5′-3

CONCRETE PLACEMENT QUANTITIES

NOTE: THESE VALUES TO BE USED FOR ALL SKEWS.

BRIDGE LENGTH	70′-0	80′-0	90′-0	100′-0	110′-0	120′-0	130′-0	140′-0	150′-0
*STANDARD SECTION CU. YDS.	12.2	14.0	15.7	17.4	19.1	21.0	22.7	24.4	26.0
END SECTION 4 @ 0.687 CU. YDS.	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
TOTAL CU. YDS.	15.0	16.8	18.5	20.2	21.9	23.8	25.5	27.2	28.8

* CONCRETE QUANTITIES SHOWN ARE BASED ON 45° SKEW BID LENGTHS.

CONCRETE OPEN RAIL QUANTITIES

BRIDGE LENGTH		UNIT	70′-0	80′-0	90′-0	100′-0	110′-0	120′-0	130′-0	140′-0	150′-0
CONCRETE OPEN RAILING, TL-4	0° SKEW	L.F.	162.0	182.0	202.0	222.0	242.0	262.0	282.0	302.0	322.0
CONCRETE OPEN RAILING, TL-4	15° SKEW	L.F.	162.2	182.2	202.2	222.2	242.2	262.2	282.2	302.2	322.2
CONCRETE OPEN RAILING, TL-4	30° SKEW	L.F.	162.9	182.9	202.9	222.9	242.9	262.9	282.9	302.9	322.9
CONCRETE OPEN RAILING, TL-4	45° SKEW	L.F.	164.5	184.5	204.5	224.5	244.5	264.5	284.5	304.5	324.5

OPEN RAIL NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

COST OF THE JOINT SEALER AND BOND BREAKER SHALL BE CONSIDERED INCIDENTAL TO OTHER CONSTRUCTION.

THE CONCRETE OPEN RAIL IS TO BE BID ON A LINEAL FOOT BASIS MEASURED FROM END TO END OF RAIL. THE NUMBER OF LINEAL FEET OF OPEN RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT. PRICE BID FOR "CONCRETE OPEN RAILING, TL-4" SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO CONSTRUCT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.

ALL OPEN RAIL CONCRETE IS TO BE CLASS C.

IF PLANS SPECIFY THAT THE REINFORCING STEEL IN THE SLAB BE EPOXY COATED, ALL OPEN RAIL REINFORCING STEEL SHALL ALSO BE EPOXY COATED. OTHERWISE THE OPEN RAIL REINFORCING SHALL NOT BE EPOXY COATED.

THE JOINT SEALER SHALL BE LIGHT GRAY NONSAG LATEX CAULKING SEALER MARKETED FOR OUTDOOR USE. NO TESTING OR CERTIFICATION IS REQUIRED.

TOP OF THE OPEN RAIL IS TO BE PARALLEL TO THEORETICAL ℄ GRADE.

IF CONDUIT IS REQUIRED IN THIS PLAN THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.

REVISED 07-2009: NUMBER OF 6d1 & 6d2 BARS CHANGED AND IS REFLECTED IN THE WEIGHT CHANGE.
REVISED 07-2016: REMOVED OPEN RAIL NOTE STATING "ALL OPEN RAIL REINFORCING STEEL IS TO BE INCLUDED WITH THE SUPERSTRUCTURE REINFORCING STEEL."
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

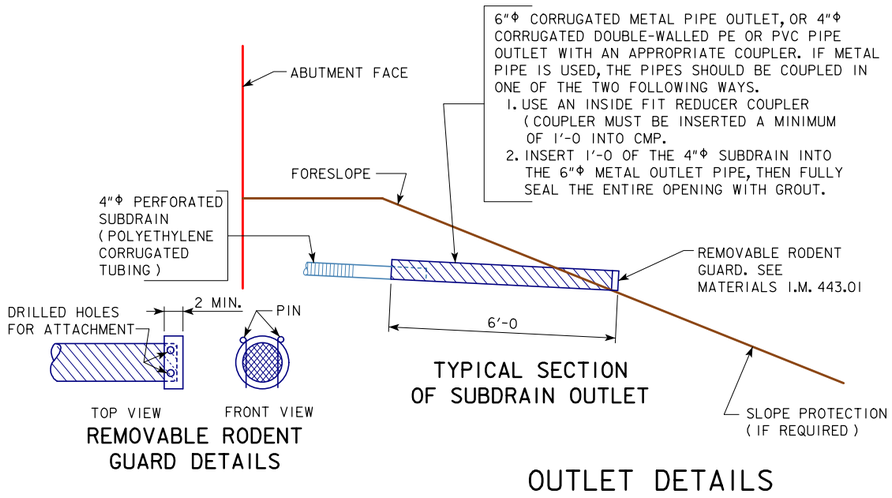
STANDARD DESIGN - 30′ ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

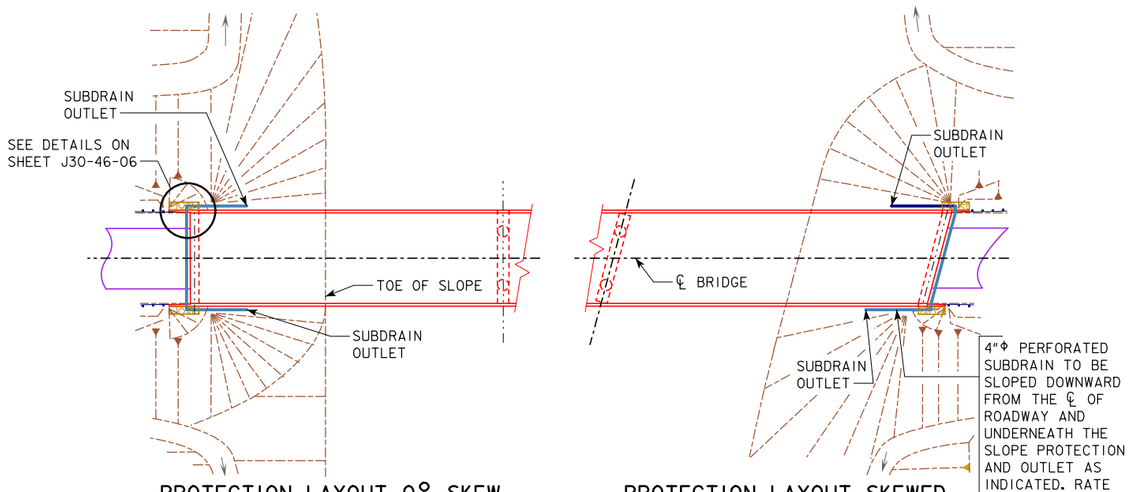
NOVEMBER, 2006

OPEN RAIL DETAILS (TL-4)

J30-44-06



OUTLET DETAILS



SITUATION PLAN

REFER TO SITUATION PLAN FOR NORTH ARROW.

REVISED 12-2008: REMOVED GRANULAR BACKFILL DETAILS.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

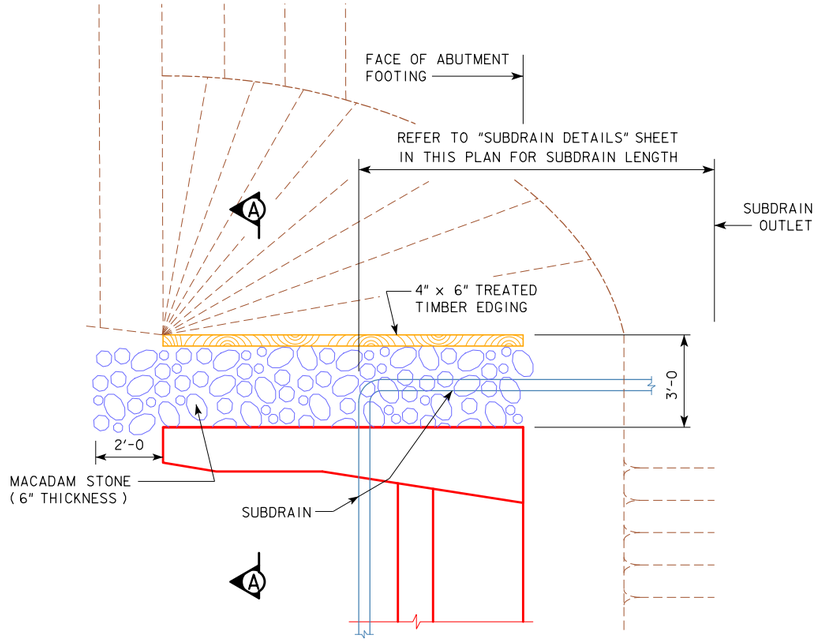
STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

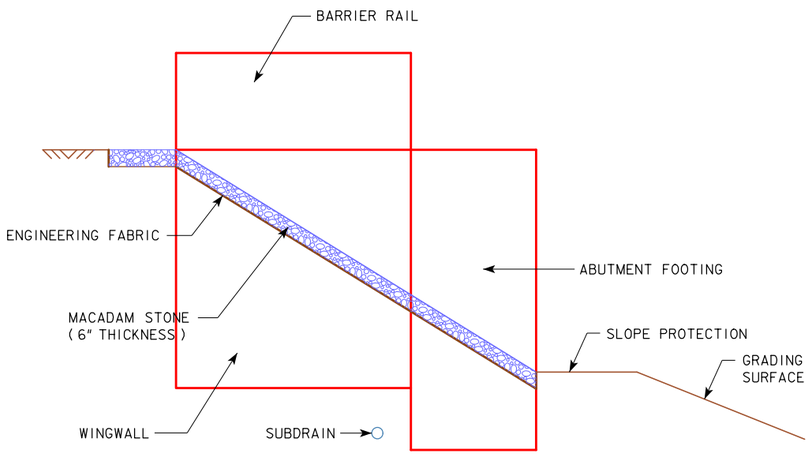
NOVEMBER, 2006

SUBDRAIN DETAILS

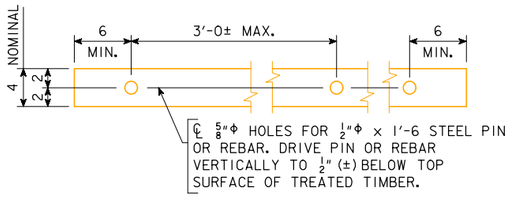
J30-45-06



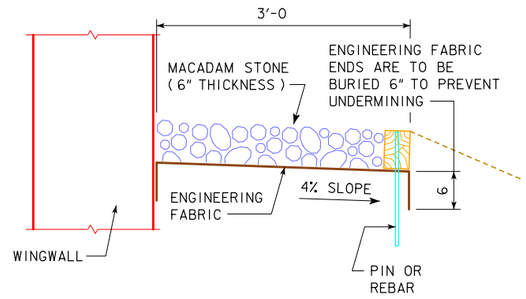
TOP VIEW OF WING ARMORING



PROFILE VIEW OF WING ARMORING



4" x 6" TREATED TIMBER EDGING DETAILS



SECTION A-A

SUBDRAIN NOTES:

SEE J30-45-06 AND "SITUATION PLAN" SHEETS FOR DETAILS OF PLACING ALL SUBDRAINS AND SUBDRAIN OUTLETS REQUIRED FOR THIS STRUCTURE.

THE BRIDGE CONTRACTOR IS TO INSTALL SUBDRAINS BEHIND THE ABUTMENT. THE SUBDRAINS SHALL BE 4" IN DIAMETER AND BE IN ACCORDANCE WITH ARTICLE 4143.01, B, OF THE STANDARD SPECIFICATIONS. THE SUBDRAIN OUTLET SHALL CONSIST OF A 6'-0 LENGTH OF PIPE WITH A REMOVABLE RODENT GUARD.

THE DIMENSIONS SHOWN FOR THE PROPOSED SUBDRAINS ARE BASED ON THE PROPOSED GRADING LAYOUT OF BRIDGE BERMS. THE DIMENSIONS SHOWN ARE FOR ESTIMATING ONLY. REQUIRED LENGTHS AND GENERAL LOCATIONS OF SUBDRAINS ARE SUBJECT TO CHANGE DUE TO FIELD ADJUSTMENTS OF THE GRADING LAYOUT.

THE COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), GRANULAR BACKFILL, POROUS BACKFILL, AND SUBDRAIN OUTLET IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)". NO EXTRA PAYMENT WILL BE MADE.

MACADAM STONE WING ARMORING NOTES:

MACADAM STONE SHALL BE PLACED ALONG THE SIDE OF THE WING AND ABUTMENT FOOTING. THIS IS TYPICAL AT EACH CORNER OF THE BRIDGE UNLESS OTHERWISE NOTED IN THE PLANS. THE MACADAM STONE AT THESE LOCATIONS SHALL BE UNDERLAYED WITH ENGINEERING FABRIC AND BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

THE BRIDGE BERM FORESLOPE SHALL BE COMPACTED AND SHAPED AS SHOWN ON THESE PLANS, THE SITUATION PLAN AND AS DIRECTED BY THE ENGINEER. THE BERM FORESLOPE SHALL BE FIRM WHEN THE ENGINEERING FABRIC AND MACADAM STONE ARE PLACED.

THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS. IF THE ENGINEERING FABRIC IS LAPPED THE LAPS SHALL BE A MINIMUM OF ONE FOOT IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.

THE MACADAM STONE SHALL BE IN ACCORDANCE WITH ARTICLE 4122.02, OF THE STANDARD SPECIFICATIONS FOR COARSE MATERIAL (NO CHOKE STONE IS ALLOWED).

WOOD PRESERVATIVE TREATMENT FOR THE TIMBER EDGING SHALL MEET THE REQUIREMENTS FOR GUARDRAIL POSTS, SAWED FOUR SIDES, AND BE IN ACCORDANCE WITH SECTION 4161, OF THE STANDARD SPECIFICATIONS.

THE MACADAM STONE SHALL BE DEPOSITED, SPREAD, CONSOLIDATED AND SHAPED BY MECHANICAL OR HAND METHODS THAT WILL PROVIDE UNIFORM DEPTH AND DENSITY AND PROVIDE UNIFORM SURFACE APPEARANCE.

PAYMENT FOR THE BRIDGE WING ARMORING SHALL BE INCIDENTAL TO THE BID ITEM "STRUCTURAL CONCRETE (BRIDGE)" AND SHALL INCLUDE COSTS OF ALL MATERIAL AND LABOR TO CONSTRUCT THE WING ARMORING AS SHOWN ON THESE PLANS.

REVISED 09-2014: THE AREA OF MACADAM STONE WAS EXTENDED 2'-0 IN FRONT OF THE BRIDGE WING.
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

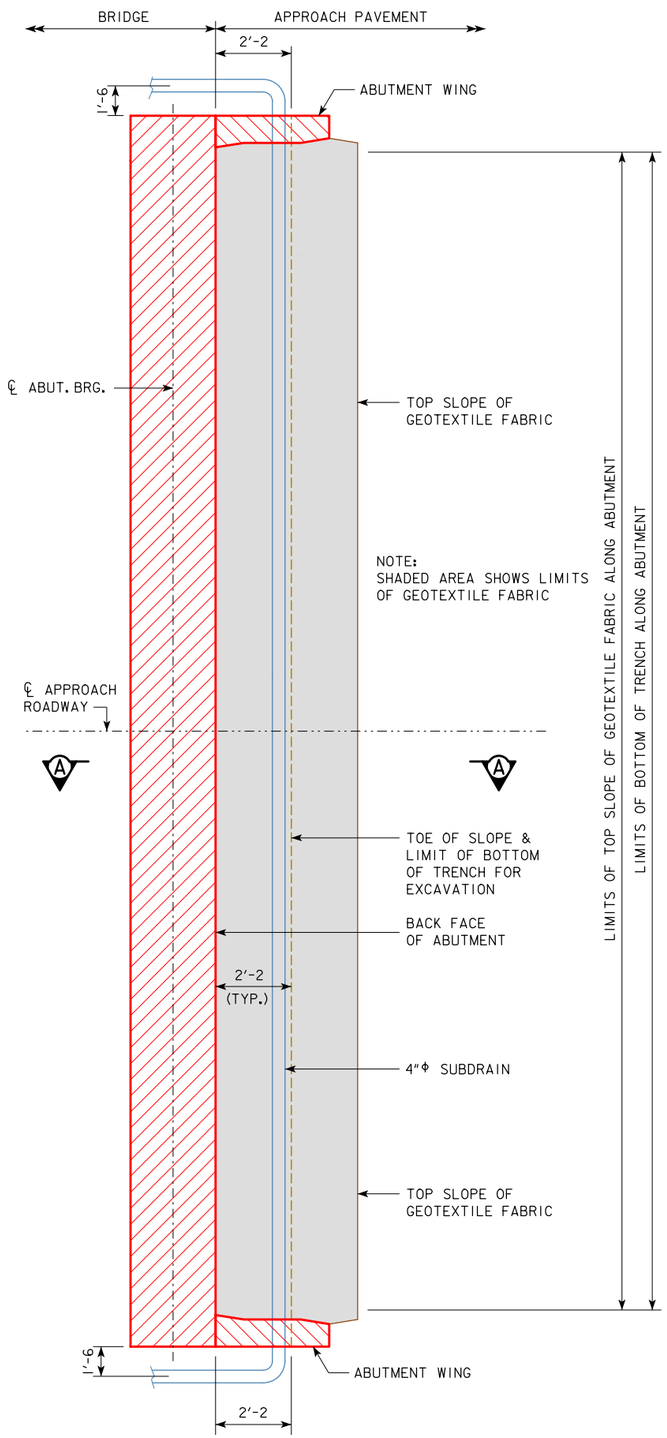
STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

WING ARMORING DETAILS

J30-46-06



ABUTMENT PLAN

ABUTMENT BACKFILL PROCESS:

THE BASE OF THE EXCAVATION SUBGRADE BEHIND THE ABUTMENT IS TO BE GRADED WITH A 4% SLOPE AWAY FROM THE ABUTMENT FOOTING AND A 2% CROSS SLOPE IN THE DIRECTION OF THE SUBDRAIN OUTLET. THIS EXCAVATION SHAPING IS TO BE DONE PRIOR TO BEGINNING INSTALLATION OF THE GEOTEXTILE AND BACKFILL MATERIAL.

AFTER THE SUBGRADE HAS BEEN SHAPED, THE GEOTEXTILE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN. THE FABRIC IS INTENDED TO BE INSTALLED IN THE BASE OF THE EXCAVATION AND EXTENDED VERTICALLY UP THE ABUTMENT BACKWALL, ABUTMENT WING WALLS, AND EXCAVATION FACE TO A HEIGHT THAT WILL BE APPROXIMATELY 1 TO 2 FOOT HIGHER THAN THE HEIGHT OF THE POROUS BACKFILL PLACEMENT AS SHOWN IN THE "BACKFILL DETAILS" ON THIS SHEET. THE STRIPS OF THE FABRIC PLACED SHALL OVERLAP APPROXIMATELY 1 FOOT AND SHALL BE PINNED IN PLACE. THE FABRIC SHALL BE ATTACHED TO THE ABUTMENT BY USING LATH FOLDED IN THE FABRIC AND SECURED TO THE CONCRETE WITH SHALLOW CONCRETE NAILS. THE FABRIC PLACED AGAINST THE EXCAVATION FACE SHALL BE PINNED.

WHEN THE FABRIC IS IN PLACE, THE SUBDRAIN SHALL BE INSTALLED DIRECTLY ON THE FABRIC AT THE TOE OF THE REAR EXCAVATION SLOPE. A SLOT WILL NEED TO BE CUT IN THE FABRIC AT THE POINT WHERE THE SUBDRAIN EXITS THE FABRIC NEAR THE END OF THE ABUTMENT WING WALL.

POROUS BACKFILL IS THEN PLACED AND LEVELED, NO COMPACTION IS REQUIRED.

THE REMAINING WORK INVOLVES BACKFILLING WITH FLOODABLE BACKFILL, SURFACE FLOODING, AND VIBRATORY COMPACTION. THE FLOODABLE BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE FLOODABLE BACKFILL SHALL BE PLACED IN INDIVIDUAL LIFTS, SURFACE FLOODED, AND COMPACTED WITH VIBRATORY COMPACTION TO ENSURE FULL CONSOLIDATION. LIMIT THE LOOSE LIFTS TO NO MORE THAN 2 FEET OF THICKNESS.

START SURFACE FLOODING FOR EACH FLOODABLE BACKFILL LIFT AT THE HIGH POINT OF THE SUBDRAIN AND PROGRESS TO THE LOW POINT WHERE THE SUBDRAIN EXITS THE FABRIC. TO ENSURE UNIFORM SURFACE FLOODING, WATER RUNNING FULL IN A 2-INCH DIAMETER HOSE SHOULD BE SPRAYED IN SUCCESSIVE 6-FOOT TO 8-FOOT INCREMENTS FOR 5 MINUTES WITHIN EACH INCREMENT.

FLOODABLE BACKFILL LIFT PLACEMENT, FLOODING, AND COMPACTION SHALL PROGRESS UNTIL THE REQUIRED FULL THICKNESS OF THE ABUTMENT BACKFILL HAS BEEN COMPLETED.

WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.

THE COST OF WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR STRUCTURAL CONCRETE.

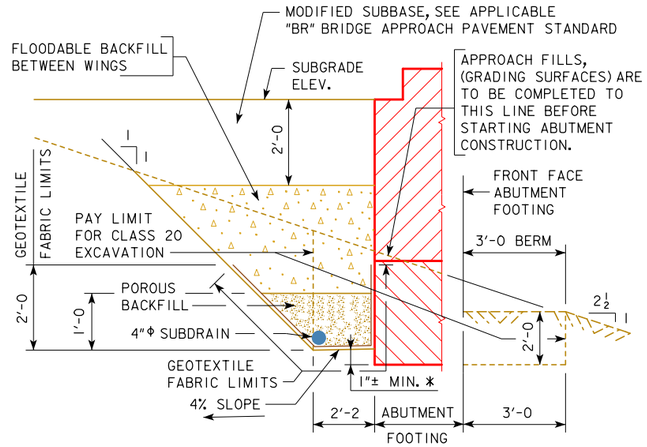
NOTE:
SEE SUBDRAIN DETAILS SHEET FOR DETAILS NOT SHOWN ON THIS SHEET WHICH ARE PERTINENT TO THIS STRUCTURE.

NOTE:

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM ℄ APPROACH ROADWAY WHEN OUTLETTING BOTH SIDES OF THE ABUTMENT.

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM HIGH END WHEN OUTLETTING AT ONE END OF THE ABUTMENT.

THE GEOTEXTILE FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 6 OF THE STANDARD SPECIFICATIONS. IF THE ENGINEERING FABRIC IS LAPPED THE LAPS SHALL BE A MINIMUM OF ONE FOOT IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.



SECTION A-A

BACKFILL DETAILS

NOTE: GEOTEXTILE FABRIC WILL BE ATTACHED TO FACE OF ABUTMENT FOOTING AND WINGS.

✱ DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

REVISED 09-2014: THE TECHNICAL DATA INFORMATION TABLE WAS REMOVED AND A NOTE ADDED TO REFER TO THE STANDARDS SPECIFICATIONS FOR THIS INFORMATION.
REVISED 07-2016: CHANGED THE BRIDGE APPROACH PAVEMENT STANDARD TO "BR" (WAS "RK").
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

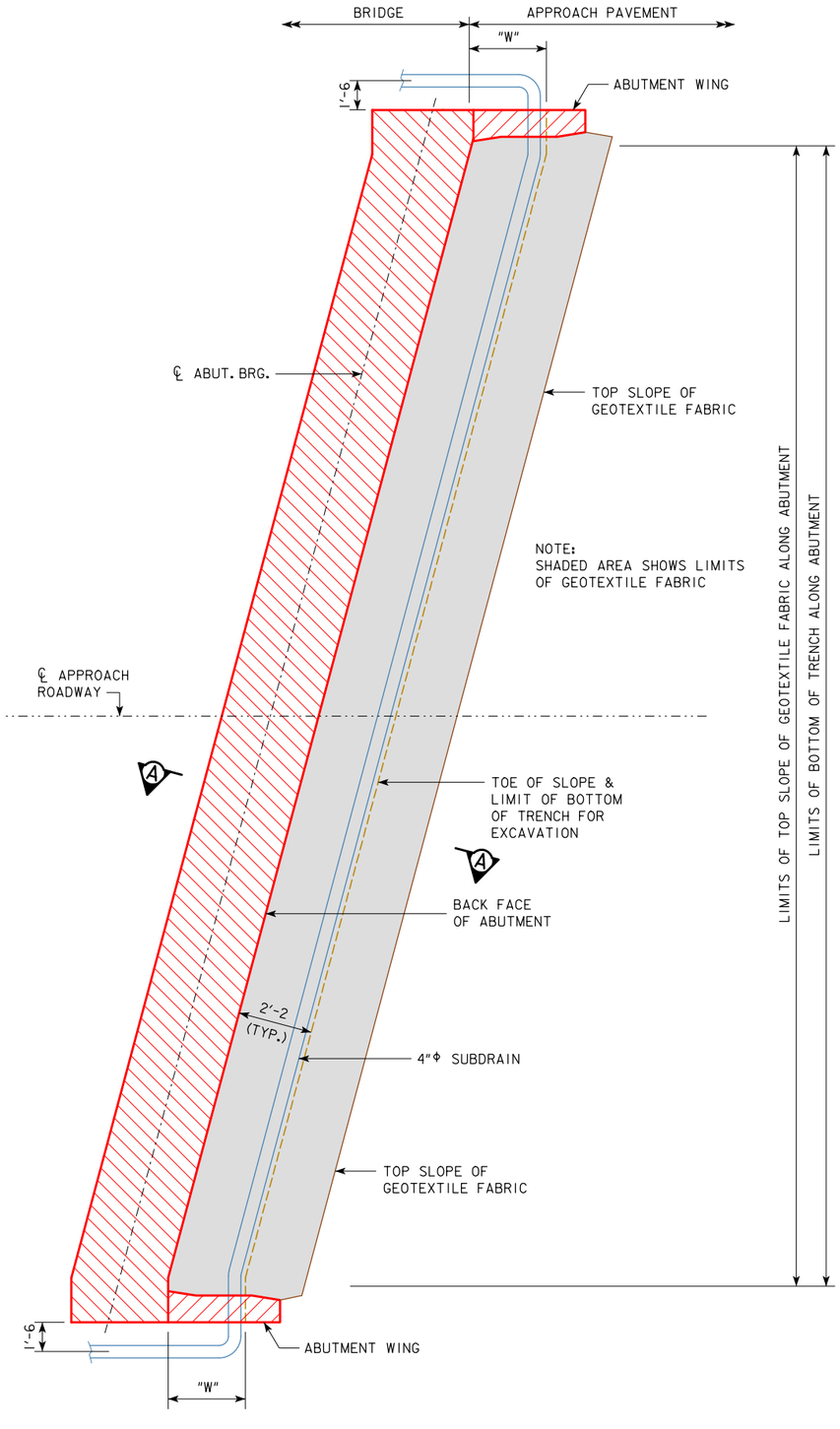
STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

DECEMBER, 2008

ABUTMENT BACKFILL DETAILS
FOR 0° SKEWS

J30-47-06



ABUTMENT PLAN WITHOUT WING EXTENSIONS

"W" DIMENSION	
SKEW	DIMENSION
15°	$2'-2\frac{7}{8}$
30°	2'-6
45°	$3'-0\frac{3}{4}$

ABUTMENT BACKFILL PROCESS:

THE BASE OF THE EXCAVATION SUBGRADE BEHIND THE ABUTMENT IS TO BE GRADED WITH A 4% SLOPE AWAY FROM THE ABUTMENT FOOTING AND A 2% CROSS SLOPE IN THE DIRECTION OF THE SUBDRAIN OUTLET. THIS EXCAVATION SHAPING IS TO BE DONE PRIOR TO BEGINNING INSTALLATION OF THE GEOTEXTILE AND BACKFILL MATERIAL.

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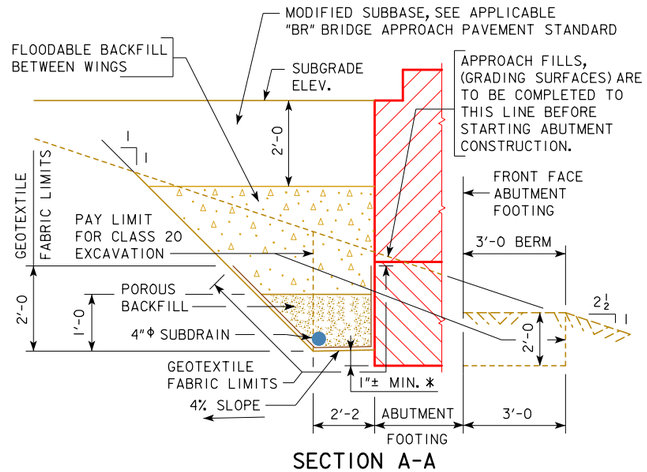

SECTION A-A

BACKFILL DETAILS

NOTE: GEOTEXTILE FABRIC WILL BE ATTACHED TO FACE OF ABUTMENT FOOTING AND WINGS.

✱ DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

09-2020
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

DECEMBER, 2008

ABUTMENT BACKFILL DETAILS

FOR 15°, 30°, & 45° SKEWS

J30-48-06

REVISED 09-2014: THE TECHNICAL DATA INFORMATION TABLE WAS REMOVED AND A NOTE ADDED TO REFER TO THE STANDARDS SPECIFICATIONS FOR THIS INFORMATION.
REVISED 07-2016: CHANGED THE BRIDGE APPROACH PAVEMENT STANDARD TO "BR" (WAS "RK").
REVISED 09-2020: UPDATED BRIDGE ENGINEER SIGNATURE.