

EPOXY COATED REINFORCING STEEL-TWO OPEN RAILS

(NOTE: THESE REINFORCING BARS TO BE USED ON ALL SKEWS)

BRIDGE LENGTH		138'-10			151'-4			163'-10			176'-4			188'-10			201'-4			213'-10			226'-4			243'-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		
6c2	VERTICAL, END SECTION		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		
4c4	VERTICAL HOOPS, END SECTION		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	VERT. HOOPS, END SEC. & ABUT. DIAPH. EXT.		16	3'-1	33	16	3'-1	33	16	3'-1	33	16	3'-1	33	16	3'-1	33	52	3'-1	107	52	3'-1	107	52	3'-1	107		
6d1	HORIZONTAL, END SECTION-BACK FACE		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, END SECTION-TRAFFIC FACE		32	6'-9	324	32	6'-9	324	32	6'-9	324	32	6'-9	324	32	6'-9	324	32	11'-2	537	32	11'-2	537	32	11'-2	537		
5d3	HORIZONTAL, ABUT. DIAPH. EXT.-BOTH FACES		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	48	7'-2	359	48	7'-2	359		
6h1	LONGITUDINAL, OPEN RAIL		24	40'-0	1,442	36	40'-0	2,163	36	40'-0	2,163	36	40'-0	2,163	48	40'-0	2,884	48	40'-0	2,884	48	40'-0	2,884	60	40'-0	3,605		
6h2	LONGITUDINAL, OPEN RAIL, ENDS		24	36'-8	1,322	24	24'-8	889	24	30'-11	1,114	24	37'-2	1,340	24	25'-2	907	24	31'-5	1,133	24	37'-8	1,358	24	25'-8	925		
4j2	HOOP, INTERIOR POST		272	4'-9	863	288	4'-9	914	320	4'-9	1,015	352	4'-9	1,117	368	4'-9	1,168	400	4'-9	1,269	416	4'-9	1,320	448	4'-9	1,422		
4j3	HOOP, OPEN RAIL		472	5'-5	1,708	498	5'-5	1,802	550	5'-5	1,990	602	5'-5	2,178	628	5'-5	2,272	680	5'-5	2,460	706	5'-5	2,555	758	5'-5	2,743		
4j4	HOOP, END POST		32	6'-7	141	32	6'-7	141	32	6'-7	141	32	6'-7	141	32	6'-7	141	32	6'-7	141	32	6'-7	141	32	6'-7	141		
4+1	WING FOOTING TIE BARS		16	VARIABLES	19	16	VARIABLES	19	16	VARIABLES	19	16	VARIABLES	19	16	VARIABLES	19	16	VARIABLES	19	16	VARIABLES	19	16	VARIABLES	19		
4+2	WING FOOTING TIE BARS		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40	1'-11	51	40	1'-11	51		
EPOXY COATED REINFORCING STEEL TOTAL LBS.			6,198			6,631			7,145			7,661			8,094			9,306			9,677			10,255		10,845		

* TRAFFIC FACE 5d3 BARS MAY REQUIRE FIELD CUTTING OR BENDING FOR HIGHER SKEW BRIDGES.

STAINLESS STEEL REINFORCING STEEL-TWO OPEN RAILS

(NOTE: THESE REINFORCING BARS TO BE USED ON ALL SKEWS)

BRIDGE LENGTH		138'-10			151'-4			163'-10			176'-4			188'-10			201'-4			213'-10			226'-4			243'-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		
6c1	VERTICAL, END SECTION & ABUT. DIAPH. EXT.		96	4'-11	709	96	4'-11	709	96	4'-11	709	96	4'-11	709	96	4'-11	709	168	4'-11	1,241	168	4'-11	1,241	168	4'-11	1,241		
6c3	VERTICAL, END SECTION		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		
6j1	VERTICAL DOWELS, OPEN RAIL		312	4'-0	1,875	328	4'-0	1,971	360	4'-0	2,163	392	4'-0	2,355	408	4'-0	2,451	440	4'-0	2,644	456	4'-0	2,740	488	4'-0	2,932		
STAINLESS STEEL REINFORCING STEEL TOTAL LBS.			2,682			2,778			2,970			3,162			3,258			3,983			4,079			4,271		4,463		

NOTE: REINFORCING STEEL QUANTITIES ARE TO BE INCLUDED ON THE SUMMARY QUANTITIES SHEET IN THE PLAN.

CONCRETE PLACEMENT SUMMARY - C.Y.

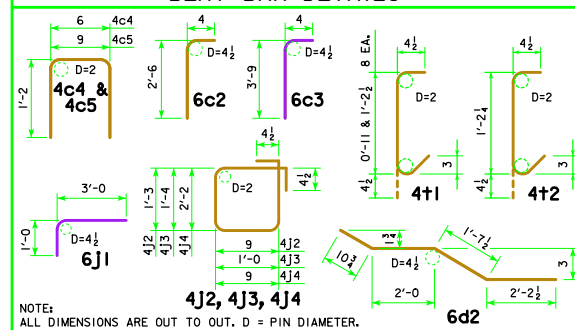
BRIDGE LENGTH		138'-10	151'-4	163'-10	176'-4	188'-10	201'-4	213'-10	226'-4	243'-0
OPEN RAIL SECTION	2 @ 0.077 CU. YDS. PER FT.	22.0	24.0	25.9	27.8	29.7	31.7	33.6	35.5	38.1
OPEN RAIL-END SECTION	4 @ 0.687 CU. YDS.	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
OPEN RAIL-ABUT. DIAPH. SECTION	4 @ 0.107 CU. YDS. PER FT.	—	—	—	—	—	1.9	1.9	1.9	1.9
OPEN RAIL-END POSTS	4 @ 0.11 CU. YDS.	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
OPEN RAIL-INTERIOR POSTS	2 x "E" @ 0.07 CU. YDS.	2.4	2.5	2.8	3.1	3.2	3.5	3.6	3.9	4.2
TOTAL (C.Y.)		27.5	29.6	31.8	34.0	36.0	40.2	42.2	44.4	47.3

CONCRETE QUANTITIES SHOWN ARE BASED ON 45° SKEW. FOR "E" SEE SHEET H40-42-14.

OPEN CONCRETE RAIL, TL-4 QUANTITIES - L.F.

BRIDGE LENGTH		138'-10	151'-4	163'-10	176'-4	188'-10	201'-4	213'-10	226'-4	243'-0
OPEN CONCRETE RAILING, TL-4 0° SKEW		311.7	336.7	361.7	386.7	411.7	456.7	481.7	506.7	540.0
OPEN CONCRETE RAILING, TL-4 15° SKEW		311.9	336.9	361.9	386.9	411.9	456.7	481.7	506.7	540.0
OPEN CONCRETE RAILING, TL-4 30° SKEW		312.6	337.6	362.6	387.6	412.6	456.7	481.7	506.7	540.0
OPEN CONCRETE RAILING, TL-4 45° SKEW		314.2	339.2	364.2	389.2	414.2	456.7	481.7	506.7	540.0

BENT BAR DETAILS



LATEST REVISION DATE

Thomas E. Mc Donnell
APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

STANDARD DESIGN - 40' ROADWAY, THREE SPAN BRIDGE
PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
SEPTEMBER, 2014

OPEN RAIL, TL-4 DETAILS
SHEET 2A OF 2

H40-43A-14