

REVISED 09-14 - CHANGED REFERENCE TO THE BARRIER RAIL & OPEN RAIL TO THE J40-14 STANDARDS INSTEAD OF J40-06 STANDARDS.

### BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE - 140' BRIDGE

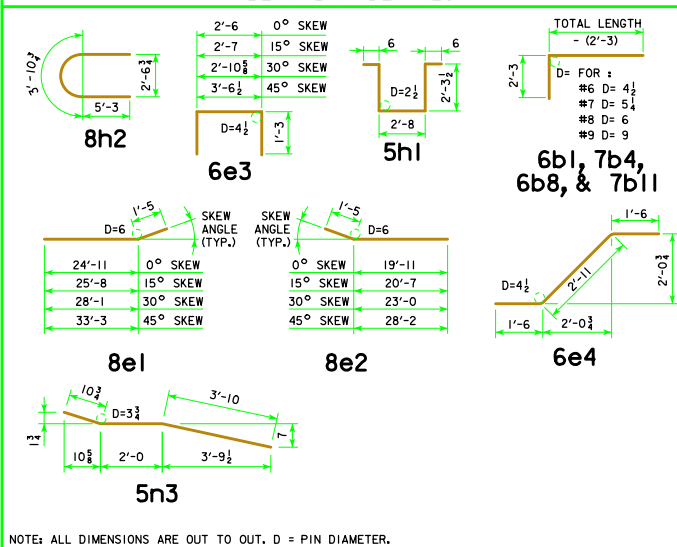
LOCATION	SKEW	SHAPE	0°				15°				30°				45°						
			NO.	LENGTH	WEIGHT		NO.	LENGTH	WEIGHT		NO.	LENGTH	WEIGHT		NO.	LENGTH	WEIGHT				
SLAB LONGITUDINAL BOTTOM			901	53	30'-6	5497	53	30'-6	5497	53	30'-6	5497	53	30'-6	5497	53	30'-6	5497	53	30'-6	5497
SLAB LONGITUDINAL BOTTOM			1002	53	48'-6	11,061	53	48'-6	11,061	53	48'-6	11,061	53	48'-6	11,061	53	48'-6	11,061	53	48'-6	11,061
SLAB LONGITUDINAL BOTTOM			903	53	43'-9	7884	53	43'-9	7884	53	43'-9	7884	53	43'-9	7884	53	43'-9	7884	53	43'-9	7884
SLAB LONGITUDINAL BOTTOM			1004	52	35'-3	7888	52	35'-3	7888	52	35'-3	7888	52	35'-3	7888	52	35'-3	7888	52	35'-3	7888
SLAB LONGITUDINAL BOTTOM			905	26	43'-0	3802	26	43'-0	3802	26	43'-0	3802	26	43'-0	3802	26	43'-0	3802	26	43'-0	3802
SLAB LONGITUDINAL BOTTOM, AT RAIL			906	8	41'-7	1132	8	41'-7	1132	8	41'-7	1132	8	41'-7	1132	8	41'-7	1132	8	41'-7	1132
SLAB LONGITUDINAL BOTTOM, AT RAIL			907	8	13'-0	354	8	13'-0	354	8	13'-0	354	8	13'-0	354	8	13'-0	354	8	13'-0	354
SLAB LONGITUDINAL BOTTOM, AT RAIL			908	4	52'-8	717	4	52'-8	717	4	52'-8	717	4	52'-8	717	4	52'-8	717	4	52'-8	717
SLAB LONGITUDINAL BOTTOM, AT RAIL			909	8	34'-3	932	8	34'-3	932	8	34'-3	932	8	34'-3	932	8	34'-3	932	8	34'-3	932
SLAB LONGITUDINAL BOTTOM, AT RAIL			10010	4	33'-0	568	4	33'-0	568	4	33'-0	568	4	33'-0	568	4	33'-0	568	4	33'-0	568
SLAB LONGITUDINAL TOP			601	53	7'-9	617	53	7'-9	617	53	7'-9	617	53	7'-9	617	53	7'-9	617	53	7'-9	617
SLAB LONGITUDINAL TOP			1102	53	26'-0	7322	53	26'-0	7322	53	26'-0	7322	53	26'-0	7322	53	26'-0	7322	53	26'-0	7322
SLAB LONGITUDINAL TOP			1103	53	31'-9	8941	53	31'-9	8941	53	31'-9	8941	53	31'-9	8941	53	31'-9	8941	53	31'-9	8941
SLAB LONGITUDINAL TOP			704	53	25'-6	2763	53	25'-6	2763	53	25'-6	2763	53	25'-6	2763	53	25'-6	2763	53	25'-6	2763
SLAB LONGITUDINAL TOP			1105	52	29'-0	8013	52	29'-0	8013	52	29'-0	8013	52	29'-0	8013	52	29'-0	8013	52	29'-0	8013
SLAB LONGITUDINAL TOP			606	26	34'-4	1341	26	34'-4	1341	26	34'-4	1341	26	34'-4	1341	26	34'-4	1341	26	34'-4	1341
SLAB LONGITUDINAL TOP, AT RAIL			608	8	32'-9	394	8	32'-9	394	8	32'-9	394	8	32'-9	394	8	32'-9	394	8	32'-9	394
SLAB LONGITUDINAL TOP, AT RAIL			1109	8	34'-0	1446	8	34'-0	1446	8	34'-0	1446	8	34'-0	1446	8	34'-0	1446	8	34'-0	1446
SLAB LONGITUDINAL TOP, AT RAIL			6010	4	25'-6	154	4	25'-6	154	4	25'-6	154	4	25'-6	154	4	25'-6	154	4	25'-6	154
SLAB LONGITUDINAL TOP, AT RAIL			7011	8	38'-3	626	8	38'-3	626	8	38'-3	626	8	38'-3	626	8	38'-3	626	8	38'-3	626
SLAB LONGITUDINAL TOP, AT RAIL			11012	8	24'-3	1031	8	24'-3	1031	8	24'-3	1031	8	24'-3	1031	8	24'-3	1031	8	24'-3	1031
SLAB TRANSVERSE BOTTOM			601	137	23'-5	4819	137	24'-3	4991	128	23'-5	4502	118	23'-5	4151						
SLAB TRANSVERSE BOTTOM			602	137	21'-3	4373	137	22'-0	4528	129	21'-3	4118	121	21'-3	3863						
SLAB TRANSVERSE ENDS, BOTTOM			603	-	-	-	-	-	-	12	VARIES	223	20	VARIES	411						
SLAB TRANSVERSE ENDS, BOTTOM			604	-	-	-	-	-	-	11	VARIES	219	20	VARIES	386						
SLAB TRANSVERSE ENDS, BOTTOM			605	-	-	-	-	-	-	11	VARIES	176	18	VARIES	302						
SLAB TRANSVERSE ENDS, BOTTOM			606	-	-	-	-	-	-	11	VARIES	190	17	VARIES	311						
SLAB TRANSVERSE TOP			501	137	23'-9	3394	137	24'-7	3513	128	23'-9	3171	118	23'-9	2924						
SLAB TRANSVERSE TOP			502	137	21'-3	3037	137	22'-0	3144	129	21'-3	2860	121	21'-3	2682						
SLAB TRANSVERSE ENDS, TOP			503	-	-	-	-	-	-	12	VARIES	155	20	VARIES	286						
SLAB TRANSVERSE ENDS, TOP			504	-	-	-	-	-	-	11	VARIES	152	20	VARIES	268						
SLAB TRANSVERSE ENDS, TOP			505	-	-	-	-	-	-	11	VARIES	122	18	VARIES	210						
SLAB TRANSVERSE ENDS, TOP			506	-	-	-	-	-	-	11	VARIES	132	17	VARIES	216						
SLAB TRANSVERSE AT ABUTMENT			801	18	26'-4	1266	18	27'-1	1302	18	29'-6	1418	18	34'-8	1667						
SLAB TRANSVERSE AT ABUTMENT			802	18	21'-4	1026	18	22'-0	1058	18	24'-5	1174	18	29'-7	1422						
SLAB, HAIRPINS, AT ABUTMENT			603	92	5'-0	691	92	5'-1	703	92	5'-5	749	92	6'-1	841						
SLAB, DIAGONALS, AT ABUTMENT			604	92	5'-11	818	92	5'-11	818	92	5'-11	818	92	5'-11	818						
PIER CAP HOOPS			501	60	8'-3	517	60	8'-3	517	60	8'-3	517	60	8'-3	517						
PIER CAP ENDS			802	4	14'-5	154	4	14'-5	154	4	14'-5	154	4	14'-5	154						
PIER CAP, BOTTOM LONGITUDINAL			803	8	25'-5	543	8	26'-7	568	8	29'-4	627	8	35'-0	748						
PIER CAP, BOTTOM LONGITUDINAL			804	8	19'-11	426	8	20'-3	433	8	22'-2	474	8	26'-10	574						
PIER CAP, TOP LONGITUDINAL			805	4	26'-2	280	4	27'-5	293	4	30'-4	324	4	36'-1	386						
PIER CAP, TOP LONGITUDINAL			806	4	21'-5	229	4	21'-10	234	4	23'-11	256	4	28'-8	307						
TOP OF SLAB, TRANSVERSE, AT RAIL			501	272	8'-6	2412	272	8'-6	2412	262	8'-6	2323	256	8'-6	2270						
WING, VERTICAL			501	40	4'-5	185	40	4'-5	185	40	4'-5	185	40	4'-5	185						
WING, HORIZONTAL BACK FACE			501	24	6'-8	167	24	6'-8	167	24	6'-8	167	24	6'-8	167						
WING, HORIZONTAL TRAFFIC FACE			503	24	6'-9	169	24	6'-9	169	24	6'-9	169	24	6'-9	169						
SUB EPOXY COATED TOTAL - LBS.						96,989			97,672			97,858			98,976						
BARRIER RAIL - SEE LIST ON RAIL SHEET J40-46-14						5483			5483			5483			5483						
OPEN RAIL - SEE LIST ON RAIL SHEET J40-49-14						5953			5953			5953			5953						
EPOXY COATED RAIL TOTAL - LBS.			WITH MONOLITHIC PIER CAP	WITH BARRIER RAIL		102,472			103,155			103,341			104,459						
EPOXY COATED RAIL TOTAL - LBS.			WITH OPEN RAIL			102,942			103,625			103,811			104,929						
EPOXY COATED RAIL TOTAL - LBS.			WITH BARRIER RAIL	NON-MONOLITHIC PIER CAP		100,323			100,956			100,989			101,515						
SAME AS ABOVE EXCEPT ALL "h" BARS DELETED			WITH OPEN RAIL			100,793			101,426			101,459			101,985						
STAINLESS STEEL RAIL TOTAL - LBS.			WITH BARRIER RAIL			3119			3119			3119			3119						
			WITH OPEN RAIL			3104			3104			3104			3104						

### ESTIMATED QUANTITIES FOR SUPERSTRUCTURE - 140' BRIDGE

ITEM	SKEW	WITH MONOLITHIC PIER CAP				WITH NON-MONOLITHIC PIER CAP			
		0°	15°	30°	45°	0°	15°	30°	45°
WITH BARRIER RAIL	*STRUCTURAL CONCRETE (BRIDGE) C.Y.	449.5	450.4	453.5	460.4	443.4	444.2	446.6	452.0
	REINF. STEEL EPOXY COATED LBS.	102,472	103,155	103,341	104,459	100,323	100,956	100,989	101,515
	REINF. STEEL STAINLESS STEEL LBS.	3119	3119	3119	3119	3119	3119	3119	3119
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.	449.2	450.1	453.3	460.1	443.2	443.9	446.4	451.7
	REINF. STEEL EPOXY COATED LBS.	102,942	103,625	103,811	104,929	100,793	101,426	101,459	101,985
	REINF. STEEL STAINLESS STEEL LBS.	3104	3104	3104	3104	3104	3104	3104	3104

\* INCLUDES 4 WINGS @ 0.68 C.Y. EACH; EXCLUDES RAIL CONCRETE.

### BENT BAR DETAILS



NOTES:

ALL BARRIER RAIL REINFORCING STEEL IS TO BE EITHER EPOXY COATED OR STAINLESS STEEL AS SHOWN OR NOTED. THE STAINLESS STEEL REINFORCING STEEL SHALL BE DEFORMED BAR GRADE 60 MEETING THE REQUIREMENTS OF MATERIALS I.M.452.

ALL OTHER REINFORCING STEEL IS TO BE EPOXY COATED.

THE TRANSVERSE REBARS ARE DETAILED WITH A SPLICE LAP. AT THE CONTRACTOR'S OPTION, THIS LAP MAY BE ELIMINATED BY FURNISHING FULL LENGTH BARS WITH NO REDUCTION IN PAY WEIGHT FOR SAME.

09-14  
LATEST REVISION DATE

*Thomas E. McQuillan*  
APPROVED BY BRIDGE ENGINEER

STANDARD DESIGN - 40' ROADWAY, 3 SPAN BRIDGES

## CONTINUOUS CONCRETE SLAB BRIDGES

JULY, 2014

**SUPERSTRUCTURE DETAILS**  
140'-0 BRIDGE

**J40-17-14**