

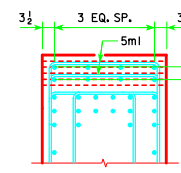
G = GRADE (%)

### STEP REINFORCING BAR LIST ONE PIER

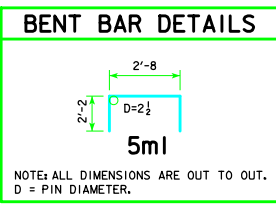
BAR	LENGTH	SHAPE	G <= 0.3%			0.3% < G <= 0.9%			0.9% < G <= 1.9%		
			NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT
5m1	7'-0		16	5	117	20	5	146	41	5	299
5n1	2'-10		16	5	47	20	5	59	4	5	12
8n2	42'-4		--	--	--	--	--	--	4	8	452
8n3	10'-11		--	--	--	--	--	--	--	--	--
8n4	21'-5		--	--	--	--	--	--	--	--	--
TOTAL (LB.)			164			205			763		

### STEP REINFORCING BAR LIST ONE PIER

BAR	LENGTH	SHAPE	1.9% < G <= 3.5%			3.5% < G <= 4.3%			4.3% < G <= 5.0%		
			NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT
5m1	7'-0		47	5	343	53	5	387	61	5	445
5n1	2'-10		16	5	47	12	5	35	12	5	35
8n2	42'-4		4	8	452	4	8	452	4	8	452
8n3	10'-11		--	--	--	4	8	117	--	--	--
8n4	21'-5		--	--	--	--	--	--	4	8	229
TOTAL (LB.)			842			991			1161		



TYPICAL SECTION



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

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

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

**NOTES:**  
THE TABLE BELOW LISTS THE ADDITIONAL CONCRETE VOLUME REQUIRED IN EACH ABUTMENT FOOTING/PIER CAP BASED ON THE ROADWAY GRADE AT EACH ABUTMENT FOOTING/PIER CAP. ADDITIONAL CONCRETE SHOULD BE ADDED TO THE PLANS FOR EACH ABUTMENT FOOTING/PIER CAP THAT HAS 0.5 CU. YDS. OR MORE OF ADDITIONAL CONCRETE. VALUES SHOULD BE EXCLUDED FOR SCENARIOS THAT HAVE LESS THAN 0.5 CU. YDS. OF ADDITIONAL CONCRETE PER SUBSTRUCTURE UNIT. VALUES MAY BE INTERPOLATED FOR GRADES BETWEEN THE VALUES SHOWN IN THE TABLE.

### ADDITIONAL CONCRETE VOLUME PER SUBSTRUCTURE UNIT (C.Y.)

	ROADWAY GRADE AT SUBSTRUCTURE UNIT				
	1%	2%	3%	4%	5%
EACH ABUTMENT FOOTING					
160'-0 TO 320'-0 SPANS	0.9	2.2	3.6	5.0	6.4
340'-0 SPANS	1.1	2.5	4.1	5.7	7.3
EACH PILE BENT OR TEE PIER CAP					
160'-0 TO 340'-0 SPANS	0.9	2.1	3.4	4.7	6.0

LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

**IOWADOT** Highway Division

STANDARD DESIGN - 40' ROADWAY, 3 SPAN BRIDGES

**ROLLED STEEL BEAM BRIDGES**

OCTOBER, 2014

ADDITIONAL QUANTITIES **RS40-169-14**

45° SKEW