

Bill of Reinforcing Steel for Superstructure - 40' Bridge													
Location	Skew Shape	0 Degree			15 Degree			30 Degree			45 Degree		
		Bar	No.	Length Weight	No.	Length Weight	No.	Length Weight	No.	Length Weight	No.	Length Weight	
Slab Longitudinal Bottom		10a1	20	42'-8" 3672	20	42'-8" 3672	20	42'-8" 3672	20	42'-8" 3672	20	42'-8" 3672	
Slab Longitudinal Bottom		11a2	20	27'-0" 2869	20	27'-0" 2869	20	27'-0" 2869	20	27'-0" 2869	20	27'-0" 2869	
Slab Longitudinal Bottom		11a3	19	42'-8" 4307	19	42'-8" 4307	19	42'-8" 4307	19	42'-8" 4307	19	42'-8" 4307	
Slab Longitudinal Bottom, at Rail		10a4	4	42'-8" 734	4	42'-8" 734	4	42'-8" 734	4	42'-8" 734	4	42'-8" 734	
Slab Longitudinal Bottom, at Rail		10a5	4	32'-10" 565	4	32'-10" 565	4	32'-10" 565	4	32'-10" 565	4	32'-10" 565	
Slab Longitudinal Top		5b1	40	24'-8" 1479	40	24'-8" 1479	40	24'-8" 1479	40	24'-8" 1479	40	24'-8" 1479	
Slab Longitudinal Top		5b2	40	13'-7" 567	40	13'-7" 567	40	13'-7" 567	40	13'-7" 567	40	13'-7" 567	
Slab Longitudinal Top		5b3	38	9'-5" 373	38	9'-5" 373	38	9'-5" 373	38	9'-5" 373	38	9'-5" 373	
Slab Longitudinal Top, at Rail		6b4	8	24'-6" 294	8	24'-6" 294	8	24'-6" 294	8	24'-6" 294	8	24'-6" 294	
Slab Longitudinal Top, at Rail		5c5	8	9'-8" 81	8	9'-8" 81	8	9'-8" 81	8	9'-8" 81	8	9'-8" 81	
Slab Transverse Bottom		6b1	37	32'-10" 1825	37	34'-0" 1890	23	32'-10" 1134	10	32'-10" 493			
Slab Transverse Ends, Bottom		6c3	-	-	-	-	30	VARIES 802	56	VARIES 1074			
Slab Transverse, Top		5d2	37	32'-10" 1267	37	34'-0" 1312	23	32'-10" 788	10	32'-10" 342			
Slab Transverse Ends, Top		5d4	-	-	-	-	30	VARIES 557	56	VARIES 746			
Top of Slab, Transverse, at W-Beam/Open Rail		41	72	7'-5" 357	72	7'-5" 357	72	7'-5" 357	70	7'-5" 347			
Top of Slab, Transverse, at Single Slope Rail		61	72	8'-7" 928	72	8'-7" 928	72	8'-7" 928	70	8'-7" 902			
Paving Block Lifting Hoops		52i	10	2'-10" 30	10	2'-10" 30	10	2'-10" 30	10	2'-10" 30			
Epoxy-Coated Sub Total - W-Beam/Open Rail - LBS.				18,420		18,530		18,609				17,973	
Epoxy-Coated Sub Total - Single Slope Rail - LBS.				18,991		19,101		19,180				18,528	

Slab, Transverse at Abutment		8e1	14	32'-10"	1227	-	-	-	-	-	-	-	-	-
Slab, Transverse at Abutment		8e2	12	•	•	•	14	33'-10"	1265	14	37'-5"	1399	14	45'-3"
Slab, Hairpins, at Abutment		6e3	72	5'-0"	541	72	5'-1"	550	72	5'-5"	586	72	6'-1"	658
Slab, Diagonal, at Abutment		6e4	72	5'-11"	640	72	5'-11"	640	72	5'-11"	640	72	5'-11"	640
Wing, Vertical		5m1	40	4'-5"	184	40	4'-5"	184	40	4'-5"	184	40	4'-5"	184
Wing, Horizontal		5n1	48	6'-8"	334	48	6'-8"	334	48	6'-8"	334	48	6'-8"	334
Epoxy-Coated Sub Total • Integral Abutment • LBS.					2,926			2,973			3,143			3,507

Slab, Diagonal, at Abutment		664	72	5'-11"	640	72	5'-11"	640	-	-	-	-	-	-
Slab, Transverse at Abutment		865	18	40'-8"	1954	18	42'-1"	2023	-	-	-	-	-	-
Slab, Transverse at Abutment, Cap Ends		866	4	5'-2"	55	4	5'-4"	57	-	-	-	-	-	-
Abutment Hairpins		651	184	8'-0"	2211	168	8'-0"	2019	-	-	-	-	-	-
Abutment Hairpins, Cap Ends		652	-	-	-	16	8'-1"	194	-	-	-	-	-	-
Abutment Hairpins, Cap Ends		563	24	8'-4"	209	24	8'-5"	211	-	-	-	-	-	-
Spiral		#2	14	38'-6"	89	14	38'-6"	89	-	-	-	-	-	-
Spiral Spacers, L 7/8x7/8x1/8x 0.7			42	1'-10"	54	42	1'-10"	54	-	-	-	-	-	-
Epoxy-Coated Sub Total - High Abutment - LBS.					5,069			5,144						
Non-Coated Sub Total - High Abutment - LBS.					143			143						

Open Rail - Integral Abutment - See Sheets J305-33-25		3,918	3,918	3,918	3,918
Open Rail - High Abutment - See Sheets J305-35-25		3,323	3,323	-	-
Single Slope Rail - Integral Abutment - See Sheets J305-27-25 & J305-31-25		3,745	3,747	3,783	3,889
Single Slope Rail - High Abutment - See Sheets J305-29-25 & J305-31-25		3,253	3,247	-	-
	With Open Rail	25,264	25,421	25,670	25,396
Integral Abutment	Total - Epoxy Coated - LBS	21,346	21,503	21,752	21,480
	With Single Slope Rail	25,662	25,821	26,106	25,924
	With Open Rail	26,812	26,997	-	-
High Abutment	Total - Epoxy Coated - LBS	23,489	23,674	-	-
	With Open Rail	27,313	27,492	-	-
	With Single Slope Rail	143	143	-	-

Item	Skew	Integral Abutment			High Abutment		
		0°	15°	30°	45°	0°	15°
* Structural Concrete (Bridge)	C.Y.	101.1	101.5	102.9	105.9	113.8	114.5
Reinf. Steel Epoxy Coated With Open Rail	LBS.	25,264	25,421	25,670	25,398	26,812	26,997
Reinf. Steel Epoxy Coated With W-Beam Guardrail	LBS.	21,346	21,503	21,752	21,480	23,489	23,674
Reinf. Steel Epoxy Coated With Single Slope Rail	LBS.	25,662	25,821	26,106	25,924	27,313	27,492
Reinf. Steel Non-Coated	LBS.	-	-	-	-	143	143

6b1, 5b2, 5b3, 6b4 & 5b5

Total Bar Length - (2'-3")

D = for:
 #5 D = 3 3/4"
 #6 D = 4 1/2"

6e3

2'-6" 0° Skew
 2'-7" 15° Skew
 2'-10 1/4" 30° Skew
 3'-6 1/2" 45° Skew

D = 4 1/2"

6e4

D = 4 1/2"

2'-11"

1'-6" 2'-0 3/4" 2'-0 3/4" 1'-6"

8e2

D = 6"

31'-0" 15° Skew
 34'-7" 30° Skew
 42'-5" 45° Skew

1'-5" 1'-5" Skew Angle (Typ.)

4j1

6'-1" (With Top Transverse Bars)

D = 3"

7 1/2" 8"

6j1

6'-9" (With Top Transverse Bars)

D = 5 1/4"

7 1/2" 1'-3"

6s1 & 6s2

2'-9"

D = 4 1/2"

2'-6" 6s1
 2'-7" 6s2

5s3

2'-6" 0° Skew
 2'-7" 15° Skew

D = 2 1/2"

2'-11"

5z1

1'-1 1/2"

D = 2 1/2" D = 8"

6" 6" 8'-3"

Note: All Dimensions Are Out To Out. D = Pin Diameter.

Latest Revision Date

Approved by Bridge Engineer



Standard Design - 30'-0" Roadway, Single Span Bridge

Single Span Concrete Slab Bridges

July, 2025

Superstructure Details 40'-0" Bridge

J30S-08-25