Preliminary Bridge Load Calculation

Analyzed w/t Matlab
Data Output
Data to be filled in
Discarded Data

Load Combo 1.2D +1.6L
1.4D

Tandom Point Load — 2 x 25 kip @ 4 ft per lane — one 25 kip must be distributed to each edge girder

Live Load Impact Factor — 0.65 *for > = 3 lines* — 2.496 — I — 106.6666667 — 17.5

Calculation sheet correction — 210

Section	Structural Element		Spacing (ft)	Tributary Width(ft)	Tributary Length/ft	Tributary Area(sq. ft)	Depth (ft)	Weight /olf	/Tributary	Distributed Load /ksf	/ksf	/ksf	Load /ksf	/kip	Tandom Load Location	deflection	0.000521049	18	Multiplication	Multiplication	Service Load Weight/kip	Moment /k-ft	Shear /kip	/kip	Design Load Moment Capacity /k-ft	Moment	Sufficent?	Shear Capacity/kip	Sufficent?
Deck	8" Slab	Concrete	-	85	525	44625	0.666666667	150	4462.5	0.1000	0.0294	0.1670	-			14.1936	1	1	4462.5									
Deck	Pavement , needs data																											
Deck	Springers	Steel W30x 391	14	14	25	350	section is used	391	9.775	0.1279	0.0294	0.2005	81.25	middle of joist for maximum		2.806969412	21	5	1026.375	1234.92	116.34		5026.3	6041.7	Yes	1280.3	Yes
Note A on dwg	Girder Type 1	flange. 6 x 48	30	30	76	2280	section is used	1211.39	92.06564	0.1404	0.0294	0.2154	(75,100,75)*0.65	4*25 = 100. @ 57' 3*25 =		6.463173882	1	17.5	1611.1487	7445.16	330.91	-	8700	20000	Yes	1280.3	Yes
Note B on dwg	Girder Type 2 (Not Used)	Steel W30x261	19	19	25	475	section is used	261	6.525	0.1137	0.0294	0.1835				3.485887059	21	2	274.05	272.33	43.57	-	3184	3529	Yes	831	Yes
Deck	Bottom Deck (Not Used)	in x 2.5 in	12.5	12.5	85	1062.5	section is used	1276.041667	108.4635417	0.2699	0.0294	0.3779				4.723891974	1	42	4555.47	3185.10	83.97	-	-	19804	Yes	-	Yes
Note C on dwg	Edge Girder	x 4.5 x 0.75 in	9.5	9.5	30	285		574	17.2265625	0.1604	0.0294	0.2395	50*0.65	maximum moment, and at		2.275406029	17.5	2	602.93	-177.77	415.04	24162.80399		11907	Yes	-	Yes
																			new moment	255.9831783							
												20.35889605	610.7668816						(kip)	11506.09714	kip)	0.2578	= 10415/525/85					
															Total Loading				Live Load(kip)	1310.4	Live Load	0.0294	=L20					
													947.5609407						(kip)	16108.54	Total Load Comb	0.3610	Combo (ksf) =					

*HSS 40inx40in 2.5 in wall thickness works Mu=19800 k-ft, Code has been Uploaded -Sam

Axial
Axial Capacity (

263300 Yes