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

Calculation sheet correction

Section	**Structural Element**		**Spacing (ft)**
Deck	8" Slab	Concrete	-
Deck	Pavement , needs data		
Deck	Springers	Steel W30x 391	14
Note A on dwg	Girder Type 1	flange, 6 x 48	30
Note B on dwg	Girder Type 2 (Not Used)	Steel W30x261	19
Deck	Bottom Deck (Not Used)	in x 2.5 in	12.5
Note C on dwg	Edge Girder	x 4.5 x 0.75 in	9.5

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

Live Load Impact Factor

one 25 kip must be distributed to each edge girder

0.65 *for > = 3 lines*

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Tributary Area

Tributary Width(ft)	Tributary Length(ft)	Tributary Area(sq. ft)	Depth (ft)	Weight (plf
85	525	44625	0.666666667	150
14	25	350	section is used	391
30	76	2280	section is used	1211.39
19	25	475	section is used	261
12.5	85	1062.5	section is used	1276.041667
9.5	30	285		574

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			2.496			I
	Distributed Load					**deflection**
/Tribuary	**(ksf)**	**(ksf)**	**Load (ksf)**	**(kip)**		**Tandom Load Location**
4462.5	0.1000	0.0294	0.1670	-		
9.775	0.1279	0.0294	0.2005	81.25		middle of joist for maximum
92.06564	0.1404	0.0294	0.2154	(75,100,75)*0.65		4*25 = 100, @ 57' 3*25 =
6.525	0.1137	0.0294	0.1835			
108.4635417	0.2699	0.0294	0.3779			
17.2265625	0.1604	0.0294	0.2395	50*0.65		maximum moment, and at
			20.35889605	610.7668816		
				947.5609407		
						cable

106.6666667	17.5				
0.000521049	18			Service Load	
Distributed	**Multiplication**	**Multiplication**	**Weight(kip)**	**Moment (k-ft)**	**Shear (kip)**
14.1936	1	1	4462.5		
2.806969412	21	5	1026.375	1234.92	116.34
6.463173882	1	17.5	1611.1487	7445.16	330.91
3.485887059	21	2	274.05	272.33	43.57
4.723891974	1	42	4555.47	3185.10	83.97
2.275406029	17.5	2	602.93	-177.77	415.04
			new moment	255.9831783	
		(kip)	11506.09714	kip)	**0.2578**
	Total Loading	**Live Load(kip)**	1310.4	Live Load	**0.0294**
		Total Load (kip)	16108.54	Total Load Comb	**0.3610**

	Plus Tandom Load
460.2438855	508.9938855

(kip)	Design Load Moment Capacity (k-ft)	Moment	Sufficent?	Shear Capacity(kip)	Sufficent?
		5026.3	6041.7 Yes	1280.3	Yes
-		8700	20000 Yes	1280.3	Yes
-		3184	3929 Yes	831	Yes
-	-		19804 Yes	-	Yes
24162.80399			11907 Yes	-	Yes

= 10415/525/85

=L20

Combo (ksf) =

Axial

Axial Capacity (

263300 Yes