



PROJECT NAME: TELKWA 62.2  
 BULKLEY RIVER CROSSING, WIDENING OF 24.0m SPAN, TPG BRIDGE  
 TASK: 6. SUPERSTRUCTURE ANALYSIS AND DESIGN  
 SUBTASK: 6.9.FLOOR BEAMS DESIGN FOR BENDING AND SHEAR

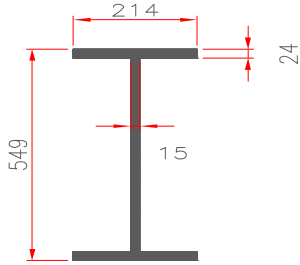
JOB NUMBER: CNRAIL0802  
 DESIGNED  
 DGT  
 DATE: 5-Aug-08  
 CHECKED  
 DATE:

MAX MOMENT 442.389252 KN-M  
 MAX SHEARS 204.2692446 KN-M

MAX COMPR. long.tract. 50.6 KN

.fb1= 140.8882968 Mpa  
 .fa(long-force)= 2.875 Mpa  
 .fv= 27.18153621 Mpa  
 Shear area= 7515 .mm2

Stress (in MPA)					
	Shear (kN)	Moment (kN-m)	Bending Stress	Shear Stress	Axial stress
Dead load	7.760	11.640	3.707	1.033	
Superimp.d.l.	39.375	78.376	24.961	5.240	
Live Load+impact	157.134	352.373	112.221	20.909	
Longitudinal force			0.000	0.000	2.875
Total	204.269	442.389	140.888	27.182	2.875
Allowable stress			182.428	122.500	
Stress ratio(dem/capacity)			0.772	0.222	



Depth= 549 21.61417323 Inch  
 Allowable bending stress for extreme fiber in compression  
 Lu= 2025 .mm 79.7244094 Inch  
 Area, fl-web=214\*24+15\*501/2 8893.5 .mm2 13.78495257 In2  
 I fl-web=24\*214^3/12+250\*15^3/12 19671000.5 .mm4  
 .rmin= 47.03020481 1.851582866 In  
 $.55F_y - 0.55(F_y)^2 * (I/r_y)^2 / 1.8 / 10^9$  26477.2549 = **182.4282864 .MPA**  
 $10,500,000 / (I_d / A_f) =$  83997.16657 578.740478 .Mpa < 0.55F\_y= 192.5

FATIGUE  
 § 1.3.13., Table 15-1-7 Number of Stress Cycles, N, classification II  
 N> 2000000

**stress category "B"**

Srfat= 16 = 110.24 Mpa  
 f atigue at 65% of total= 25.95%  
 Moment (Live load+impact= 317.18 KN-m  
 $\sigma_{fat}$  101.01 MPA  
 at the level of fatigue detail (web to flange fillet weld) **92.18 MPA** < **110.2**

REFERENCES:

§ 1.3.13.,  
 Table 15-1-7

Table 15-1-8