



Castle Engineering LLP

P.O. Box 1572
145 – 1st. Ave. NE
Swift Current, Saskatchewan
S9H 4G5

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Castle Eng. #: 18-1786

Geoff Heschel
GH The Leveller
P.O. Box 323
Morse, Sask. CA.
S0H 3C0



**RE: Engineered Leveler Documentation
"GH The Leveller"**

Castle Engineering has analyzed and sealed "GH The Leveller" for the loads and parameters noted below. As per the information provided the GH Leveller is constructed using SAE Gr.5 bolts with a total leveler height of 4" (102mm) including 3" of gr.5 bolt and a 3/16" top and bottom plate.

Design parameters:

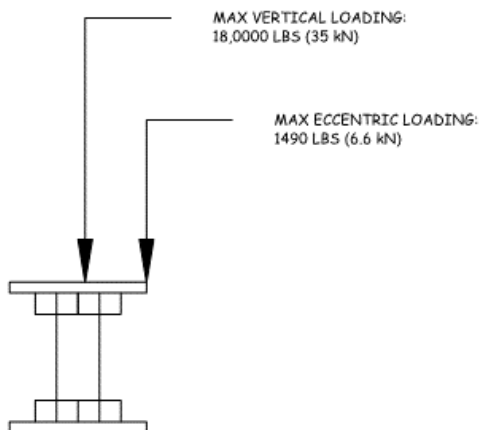
Gr. 5 Bolts Yield Strength:	36 ksi
Effective sold core area:	0.5 in ² (322 mm ²)
Bending Stress Factor ϕ_b :	0.67
Compression Factor ϕ_c :	0.60
Design valid for total length of leveler bolt:	3" (75 mm)



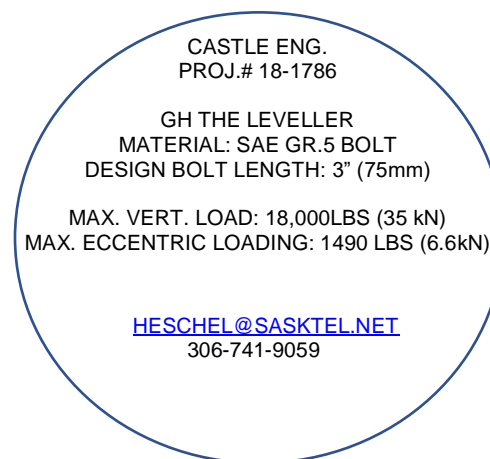
Analysis design capacities:

Max Vertical Loading (at center of leveler):	18,000 lbs (35kN)
Max Shear Eccentric Loading (at edge of disc):	1,490 lbs (6.6kN)
Factored Shear Resistance, V_r :	62.7 kips (279 kN)

It is recommended that the below sticker be fastened to each GH The Leveller.



Sticker Template:



Sincerely,

Carolyn Emperingham, P.Eng.

Erroll Castle P.Eng	C: 306-774-8168	E: erroll@cdinspec.com
Carolyn Emperingham P.Eng.	C: 306-750-7716	E: carolyn@cdinspec.com