PennDOT Truss Gusset Plate Analysis and Ratings Spreadsheet

SUMMARY OF TGPARv1.0, 1.01, & 2.0 REVISIONS

November 17, 2009

TGPARv1.0

1. TGPAR was revised to automatically clear all hidden data previously used in the governing operating ratings computations after manually clearing all "Input" tab data and reopening the spreadsheet so it can be reused again.

TGPARv1.01

2. TGPARv1.0 uses the ASD equation instead of the appropriate LFD equation to compute the block shear rupture resistance for Case 3 (vertical & diagonal members).TGPARv1.0 was revised to apply the proper block shear rupture resistance equations for Case 3.

3. TGPARv1.0 uses the ASD shear capacity instead of the LFD one in selecting the effective length factor, K, for the LFD compression check (K = 2 if the plate yields in shear along Section A-A; otherwise, K =1.2). TGPARv1.0 was revised to select the proper value of K for the LFD compression check.

TGPARv2.0

4. TGPARv1.01 modifies shear forces in sections BB and CC when total numbers of fasteners connecting chord members to gusset plates are inputted in "Optional Information". TGPARv1.01 was revised to retain the same shear forces in sections BB and CC only if splice plates data are not inputted in "Option Information"

5. TGPARv2.0 now automatically reduces the shear capacity of a fastener for a member by 20% if the length between first and last row of fasteners connecting this member to the gusset plate in transverse direction is greater than 50 in. as per FHWA Load Rating Guidance and Examples for Bolted and Riveted Gusset Plates in Truss Bridges, February 2009.