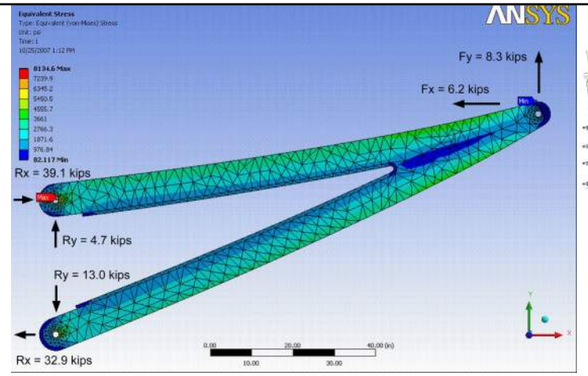
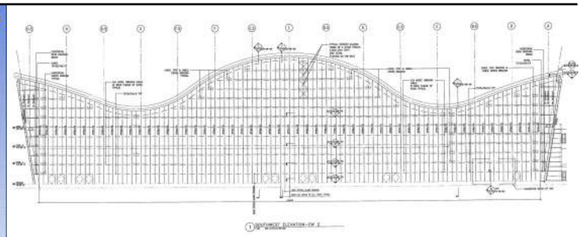
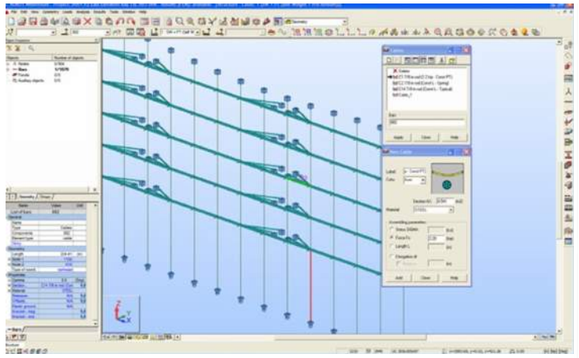
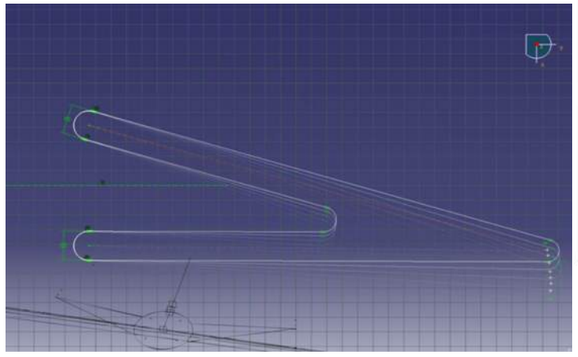
HAMED INTERNATIONAL , QATAR

SECTOR: AVIATION
TYPE: FACADE
MATERIAL: GLASS/AESS/ALUMINIIUM/METAL PANEL
EMPLOYER: BURO HAPPOLD
TITLE: SENIOR ENGINEER
PHASE: DD/CA
ARCHITECT: HOK
OWNER: CITY OF ANAHEIM
GC: BECHTEL/OBI
PROJECT COST: $17 BILLION
SIZE: 65 MILLION SQ. FT/41 GATES
ENGAGEMENT: 2007









6.4.H Design Tensile Strength

Using:

- AISC 2005 Specifications for Structural Steel Buildings (SSSB) Chapter D

6.4.H.3 Fracture in the Net Section

A_n	Net Area	$A_n := A_g$		
l	Length of connection - weld - on single gusset plate	$l := H$	$l = 8 \cdot in$	SSSB - Table D3.1, p.29
x	Connection eccentricity	$\bar{x} := \frac{B^2 + 2 \cdot B \cdot H}{4 \cdot (B + H)}$		SSSB - Table D3.1, p.29
U	Shear Lag Factor	$U := 1 - \frac{\bar{x}}{l}$	$U = 0.792$	SSSB - Table D3.1, p.29
A_e	Effective Net Area	$A_e := U \cdot A_n$		$A_e = 7.711 \cdot in^2$

6.4.I Combined Flexural and Axial Tensile Strength

Note:

- AISC 2005 Specifications for Structural Steel Buildings (SSSB) Chapter H1.1

6.4.I.1 Maximum Axial Tensile Force

P_r	Required Axial Tensile Strength - Design maximum (ASD)	$P_r := P_{at}$	$P_r = 6.22 \cdot kip$
M_{rx}	Required flexural strength at load P_r about strong axis - H. (ASD)	$M_{rx} := M_{ax}$	$M_{rx} = 14.77 \cdot kip \cdot ft$
M_{ry}	Required flexural strength at load P_r about weak axis - B. (ASD)	$M_{ry} := M_{ay}$	$M_{ry} = 2 \cdot kip \cdot ft$

6.4.I.2 Maximum Flexural Load

P_r	Required Axial Tensile Strength at Design Flexure maximum M_{cx} (ASD)	$P_r := P_{at}$	$P_r = 6.22 \cdot kip$
M_{rx}	Required maximum flexural strength about strong axis - H. (ASD)	$M_{rx} := M_{ax}$	$M_{rx} = 14.77 \cdot kip \cdot ft$
M_{ry}	Required flexural strength at load P_r about weak axis - B - at Design Flexure maximum M_{cx} (ASD)	$M_{ry} := M_{ay}$	$M_{ry} = 2 \cdot kip \cdot ft$