

Envelope Member Section Forces (Continued)

Table with columns: Member, Sec, Axial (k), I.C. v Shear (k), I.C. z Shear (k), I.C. Torque (k-ft), I.C. v Moment (k-ft), I.C. z Moment (k-ft), I.C. z Moment (k-ft)

Envelope AISC 13th(360-05): ASD Steel Code Checks

Table with columns: Member, Shape, Code C, Locfti, I.C. Shear, Locfti, Dir, Pnchom, I.K1, Pnchom, I.K1, Mnztom, Cb, Mnztom, Cb, Ecn

84.29A
w
A



PROJECT: CT 1887

JOB NO.: U0142-630-121

DATE: 06/22/12

DESIGNED: BDV

CHECKED: TPH

SHEET 30

OF 31

SUBJECT: WELDED CONNECTION

WELDED CONNECTION W/ FILLET WELDS TREATED AS LINES

DESCRIPTION: CONNECTION OF COLUMN TO BASE PLATE

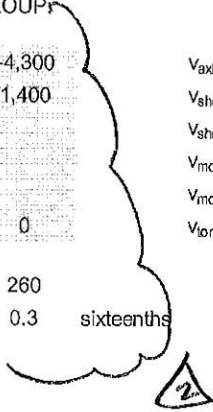
MEMBER SIZE: 5" STD PIPE

b or r (in) =	2.78	$S_{XWELD} (in^2) =$	24.28	(Used with Moment _{yy})
d (in) =		$S_{YWELD} (in^2) =$	24.28	(Used with Moment _{zz})
Lweld (in) =	17.4	$I_{PWELD} (in^3) =$	134.99	
Equation # :	10		(circular weld group)	
c for Torque (in) =	0			
Stress Increase:	1			

FORCES ON WELD GROUP

AXIAL (lb) =	-4,300	$V_{axial} (lb/in) =$	-247.13
SHEAR _{yy} (lb) =	1,400	$V_{shearyy} (lb/in) =$	80.46
SHEAR _{zz} (lb) =		$V_{shearzz} (lb/in) =$	0.00
MOMENT _{yy} (ft-lb) =		$V_{momentyy} (lb/in) =$	0.00
MOMENT _{zz} (ft-lb) =		$V_{momentzz} (lb/in) =$	0.00
TORQUE (ft-lb) =	0	$V_{torque} (lb/in) =$	0.00

$V_{MAX} (lb/in) =$ 260
 $D_{REQ.} =$ 0.3 sixteenths



COLUMN BASE PLATES

$$T_{max} = 5.6 \text{ K (NEW} = 4.3 \text{ K V)}$$

$$V_{max} = 2.2 \text{ K (NEW} = 1.4 \text{ K V)}$$

PLATE BENDING:

$$M_{max} = \frac{5.6 \text{ K}(9'')}{4} = 12.6 \text{ k-in}$$

$$\frac{M_n}{S_x} = \frac{F_y \cdot Z}{S_x}$$

$$= \frac{36 \cdot Z}{1.67} = 12.6 \text{ k-in}$$

$$\Rightarrow Z \geq 0.59$$

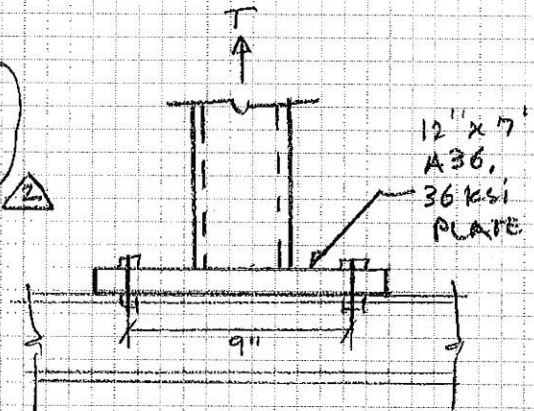
$$0.59 = 1.75 h^2$$

$$\Rightarrow h_{min} = 0.6 \text{ in}$$

SELECT 3/4" THICK A36 PL

BOLTS! $T_{max} = 5.6 \text{ K} = 1.4 \text{ K/BOLT}$, $V = 0.6 \text{ K/BOLT}$

SELECT (4) 5/8" Ø A325 BOLTS w/ $T_{ALL} = 13.8 \text{ K}$ $V_{ALL} = 7.3 \text{ K}$



$$Z = \frac{bh^2}{4} = \frac{(17'')(h^2)}{4} = 1.75 h^2$$