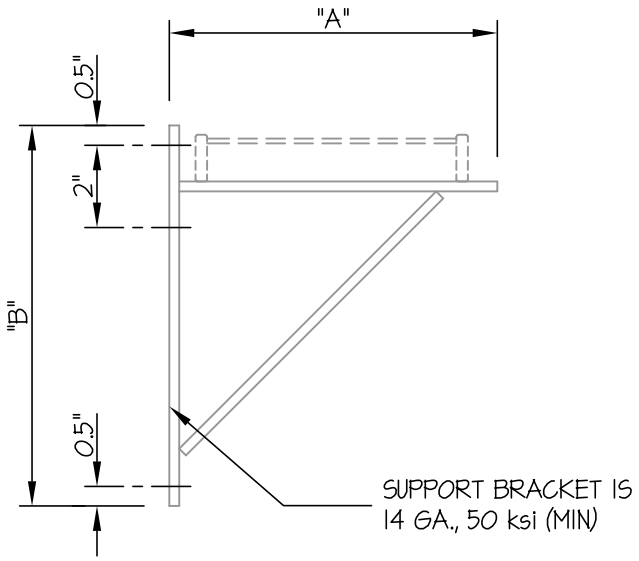
EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING www.equipmentanchorage.com		
CHATSWORTH PRODUCTS, INC.	DES. J. ROBERSON	SHEET 1
	JOB NO. 11-1131	
TRIANGULAR SUPPORT BRACKET	DATE 6/7/12	OF 2 SHEETS

SEISMIC ANCHORAGE

WALL MOUNTED



SIDE ELEVATION

	MODEL	"A" (in.)	"B" (in.)	MAX. LOAD (lbs)	Tu (lbs/screw)	Vu (lbs/screw)
*	X06	7.75	9.25	140	177	134
	X12	13.75	15.25	140	171	126
	X18	19.75	21.25	140	170	123

* THIS MODEL USED IN CALCULATION BELOW

NOTES:

1. FORCES ARE DETERMINED PER 2010 CALIFORNIA BUILDING CODE AND ASCE 7-05. STRENGTH DESIGN IS USED.

   HORIZONTAL FORCE (E_h) = 1.44 W_p (S_{DS} = 2.00, a_p = 1.0, I_p = 1.5, R_p = 2.5, $z/h \leq 1.0$)
   VERTICAL FORCE (E_v) = 0.40 W_p

2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE SUPPORT STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN.

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2014
6/7/12
STRUCTURAL
STATE OF CALIFORNIA

NOT STRUCTURAL ENGINEER OF RECORD

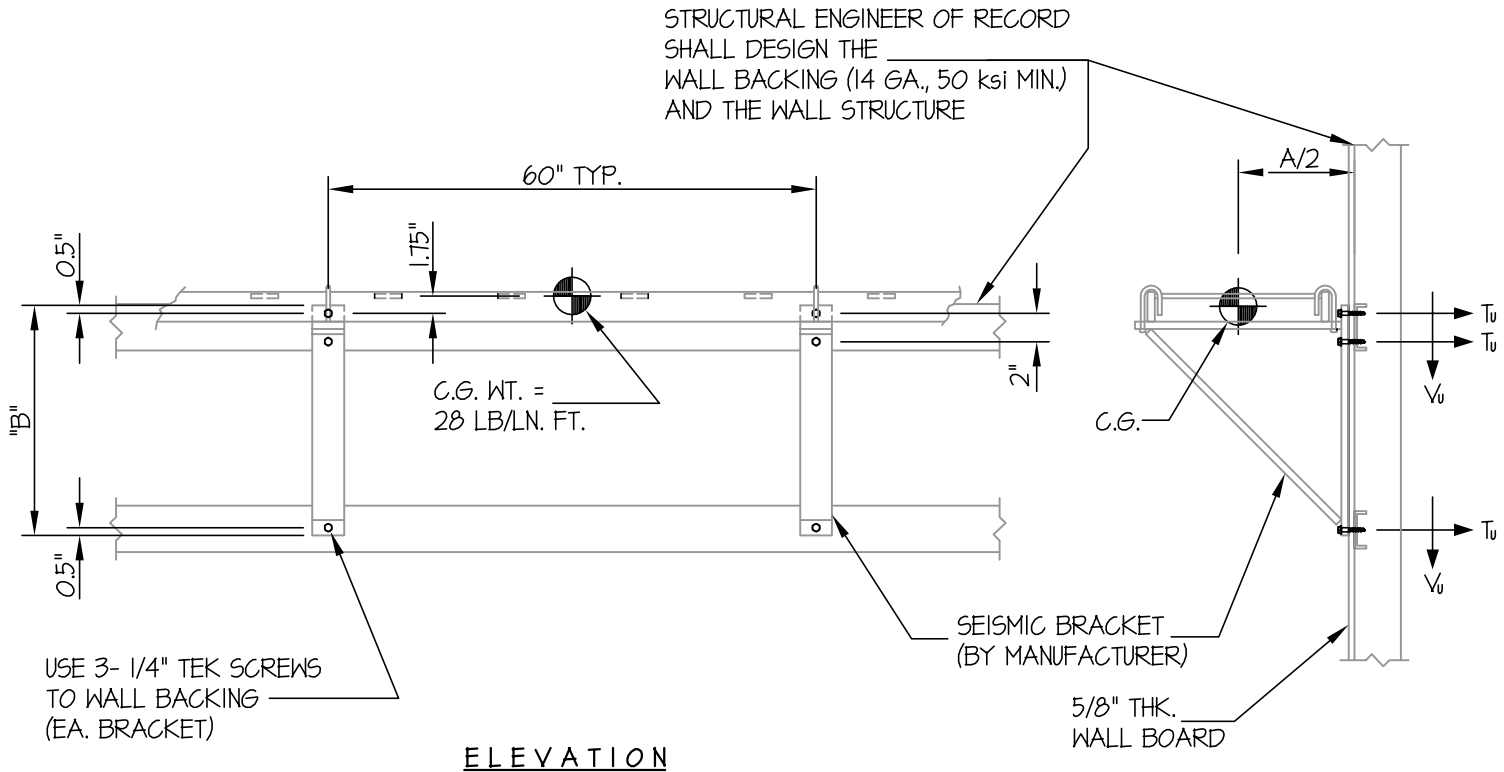
EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING
www.equipmentanchorage.com

CHATSWORTH PRODUCTS, INC.

TRIANGULAR SUPPORT BRACKET

DES. J. ROBERSON
JOB NO. 11-1131
DATE 6/7/12
SHEET 2 OF 2 SHEETS

SEISMIC ANCHORAGE — WALL MOUNTED



ELEVATION

STEEL STUD WALL SECTION

LOADS: PER 2010 CALIFORNIA BUILDING CODE AND ASCE 7-05.
(STRENGTH DESIGN IS USED) (S_{DS} = 2.00, a_p = 1.0, I_p = 1.5, R_p = 2.5, $z/h \leq 1.0$)
WEIGHT = 140 LB (SUPPORTS @ 5'-0" O.C.
HORIZONTAL FORCE (E_h) = $1.44W_p$ = 202 LB
VERTICAL FORCE (E_v) = $0.40W_p$ = 56 LB

SCREW FORCES: MODEL X06 USED IN CALCULATION

TENSION (T)

$$T_{u\ VERTICAL} = \frac{(1.2(140\#) + 56\#)3.88"}{2\ screws(8.25")} = 53\ LB$$

$$T_{u\ PARALLEL} = \frac{202\#(3.88")(10")}{2\ screws(60")(8.25")} = 8\ LB$$

$$T_{u\ PERP.} = \frac{202\#(10")}{2\ screws(8.25")} = 122\ LB$$

$$T_{u\ MAX} = 53\# + 0.3(8\#) + 122\# = 177\ LB/SCREW\ (MAX)$$

SHEAR (V)

$$V_{u\ MAX} = \sqrt{\left(\frac{1.2(140\#) + 56\#}{4\ screws}\right)^2 + \left(\frac{202\#(10")}{2\ screws(8.25")}\right)^2} = 134\ LB/SCREW\ (MAX)$$

1/4"ø TEK SCREWS TO 14 GAGE, 50 KSI
ϕT = 440 LB/SCREW
ϕV = 362 LB/SCREW

UNITY CHECK:

$$\left(\frac{Tu}{\phi T}\right) + \left(\frac{Vu}{\phi V}\right) \leq 1.0$$

$$\left(\frac{177}{440}\right) + \left(\frac{134}{362}\right) = 0.77 \leq 1.0 \quad \therefore \text{ O.K.}$$