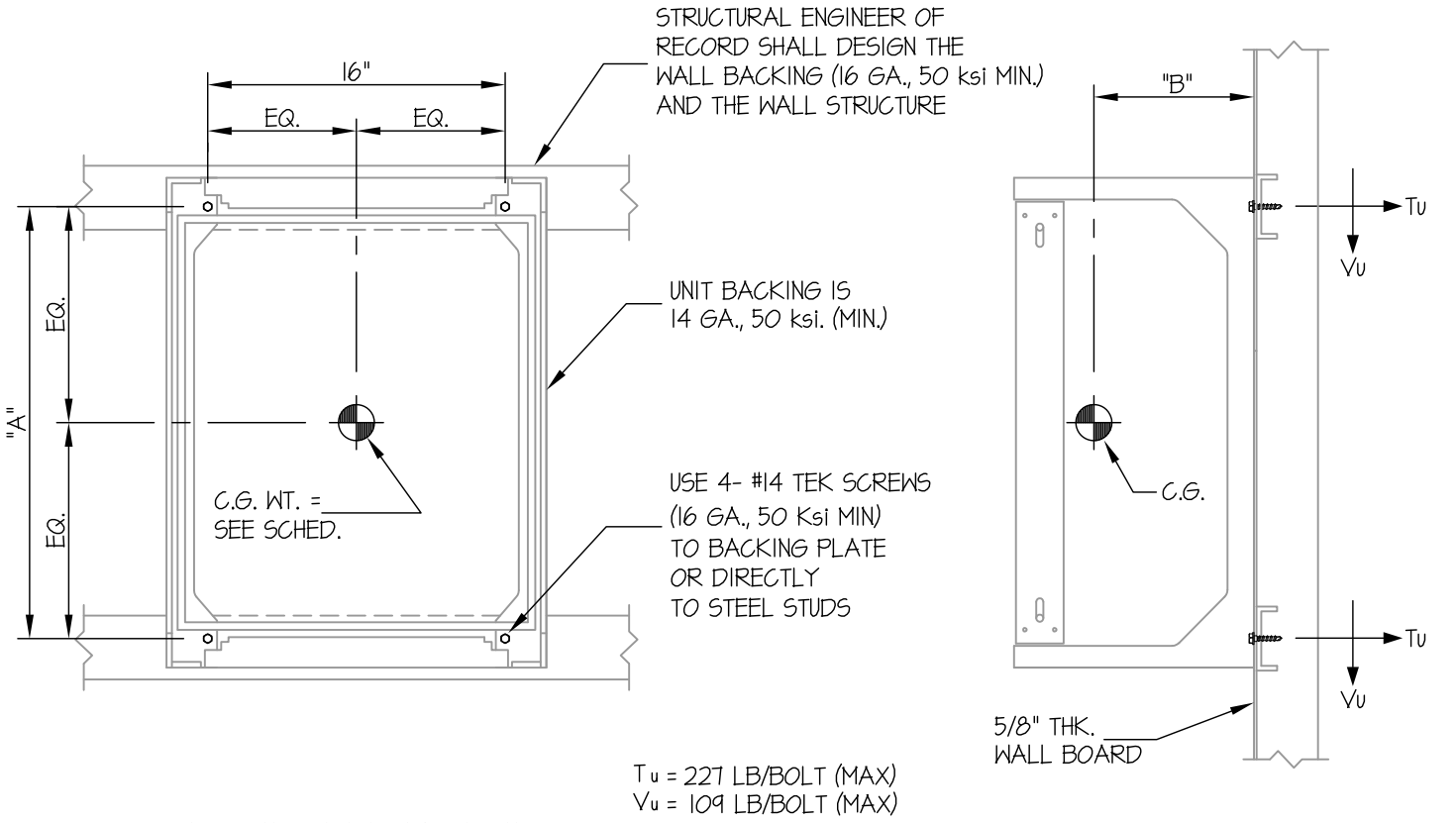
EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING www.equipmentanchorage.com		
CHATSWORTH PRODUCTS, INC.	DES. J. ROBERSON	SHEET 1
	JOB NO. 11-1131	
SWING GATE RACKS	DATE 6/29/12	OF 2 SHEETS

SEISMIC ANCHORAGE — WALL MOUNTED



Tu = 227 LB/BOLT (MAX)
Vu = 109 LB/BOLT (MAX)

FRONT ELEVATION

STEEL STUD WALL SECTION

SEE PAGE 2 OF 2 FOR WEIGHT, DIMENSIONS

NOTES:

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

   HORIZONTAL FORCE (E_h) = 1.50 W_p (S_{DS} = 2.00, a_p = 2.5, I_p = 1.5, R_p = 6.0, $z/h \leq 1.0$)
   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. 6-30-2012
STRUCTURAL
STATE OF CALIFORNIA
6/29/12

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SWING GATE RACKS

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SHEET 2 OF 2 SHEETS

SEISMIC ANCHORAGE — WALL MOUNTED

MODEL NO.	"A" (in)	"B" (in)	WEIGHT (lbs)
11790-X12	24.15"	9"	121
11790-X18	24.15"	13.5"	123
* 11790-X25	24.15"	18.75"	141
11791-X12	38.15"	9"	123
11791-X18	38.15"	13.5"	125
11791-X25	38.15"	18.75"	145
11807-X12	48.65"	9"	124
11807-X18	48.65"	13.5"	129
11807-X25	48.65"	18.75"	149
11792-X12	73.15"	9"	130
11792-X18	73.15"	13.5"	132
11792-X25	73.15"	18.75"	159

* MODEL REPRESENTED IN CALCULATION BELOW

LOADS: PER 2010 CALIFORNIA BUILDING CODE AND ASCE 7-05
(STRENGTH DESIGN IS USED) (S_{DS} = 2.00, a_p = 2.5, I_p = 1.5, R_p = 6.0, $z/h \leq 1.0$)

WEIGHT = 141 LB
HORIZONTAL FORCE (E_h) = $1.50W_p$ = 212 LB
VERTICAL FORCE (E_v) = $0.40W_p$ = 56 LB

BOLT FORCES:

TENSION (T)

$$T_{u\ VERTICAL} = \frac{1.2(141\#) + 56\#)18.75''}{2\ SCREWS(24.15'')} = 87\ LB$$

$$T_{u\ PARALLEL} = \frac{212\#(18.75'')}{2\ SCREWS(16'')} = 124\ LB$$

$$T_{u\ PERP.} = \frac{212\#}{4\ SCREWS} = 53\ LB$$

$$T_{u\ MAX} = 87\# + (0.3)(53) + 124 = 227\ LB/SCREWS\ (MAX)$$

SHEAR (V)

$$V_{u\ MAX} = \frac{1.2(141\#) + 56\# + 212\#}{4\ SCREWS} = 109\ LB/SCREWS\ (MAX)$$

#14 TEK SCREWS TO 16 GAGE, 50 KSI
ϕT = 418 LB/SCREW
ϕV = 362 LB/SCREW

UNITY CHECK:

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \leq 1.0$$

$$\left(\frac{227}{418}\right) + \left(\frac{109}{362}\right) = 0.85 \leq 1.0 \quad \therefore \text{ O.K.}$$