

CHATSWORTH PRODUCTS, INC.

FIXED RACKS (HEAVY DUTY)

DES. J. ROBERSON

JOB NO. 11-1131

DATE 7/6/12

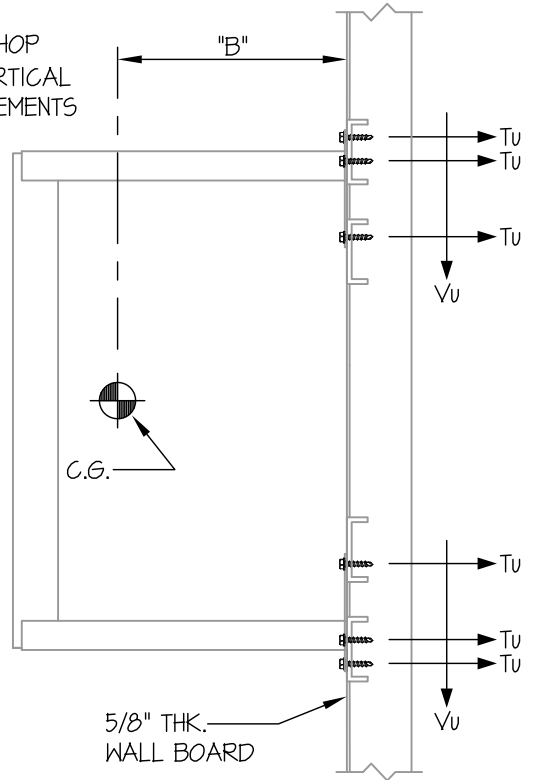
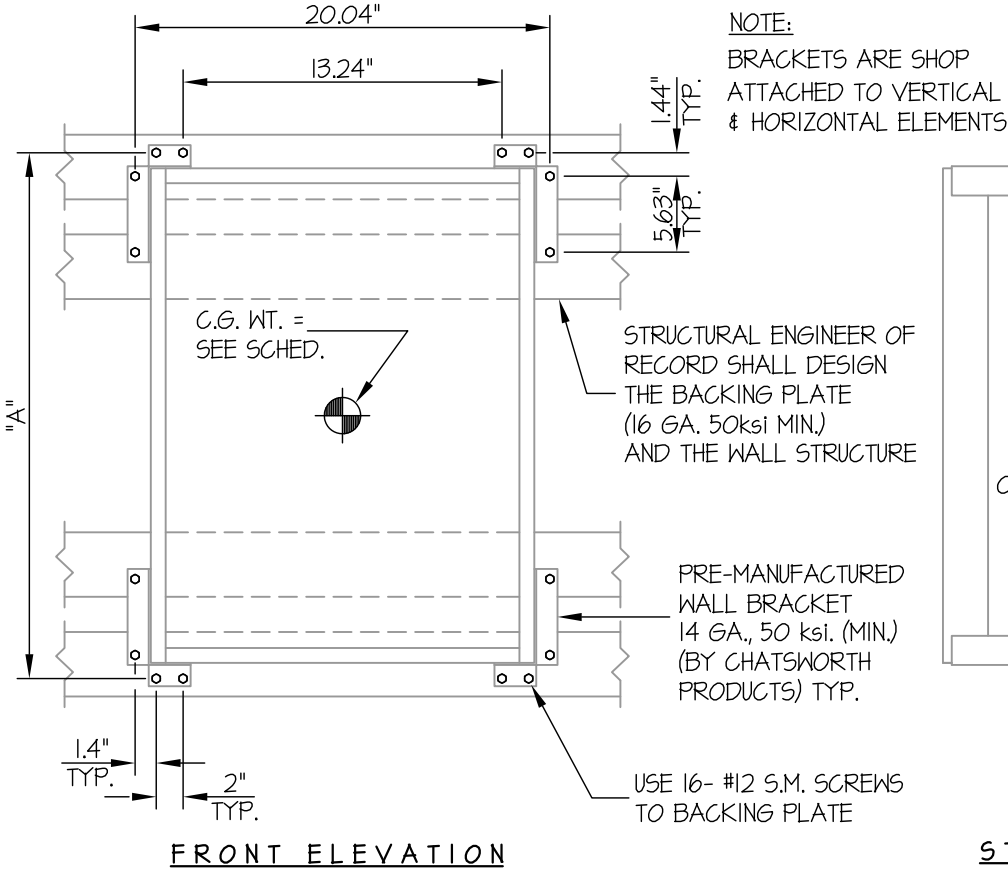
SHEET

1

OF **2** SHEETS

SEISMIC ANCHORAGE

WALL MOUNTED



STEEL STUD WALL SECTION

Tu = 139 LB/SCREW (MAX)
Vu = 73 LB/SCREW (MAX)

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. 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.



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MODEL NO.	"A" (in)	"B" (in)	WEIGHT (lbs)
15320-X18	40.32"	13.5"	371
* 15320-X24	40.32"	18"	378
15321-X18	75.32"	13.5"	377
15321-X24	75.32"	18"	380

* 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 = 378 LB

HORIZONTAL FORCE (E_h) = $150W_p = 567$ LB

VERTICAL FORCE (E_v) = $0.40W_p = 151$ LB

BOLT FORCES:

#12 TEK SCREWS IN 16 GA., 50 KSI STEEL

$\phi T = 328$ LB/SCREW

$\phi V = 288$ LB/SCREW

TENSION (T)

$$T_{u \text{ VERTICAL}} = \frac{(1.2(378\#) + 151\#)18''}{8_{\text{SCREWS}}(31.81'')} = 43 \text{ LB}$$

$$T_{u \text{ PARALLEL}} = \frac{567\#(18'')}{8_{\text{SCREWS}}(15.24'')} = 85 \text{ LB}$$

$$T_{u \text{ PERP.}} = \frac{567\#}{16_{\text{SCREWS}}} = 35 \text{ LB}$$

$$T_{u \text{ MAX}} = 43\# + (0.3)(35) + 85 = 139 \text{ LB/SCREW (MAX)}$$

UNITY CHECK:

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

$$\left(\frac{139}{328}\right) + \left(\frac{73}{288}\right) = 0.68 \leq 1.0 \therefore \text{O.K.}$$

SHEAR (V)

$$V_{u \text{ MAX}} = \frac{1.2(378\#) + 151\# + 567\#}{16 \text{ SCREWS}} = 73 \text{ LB/SCREW (MAX)}$$