

## CHATSWORTH PRODUCTS, INC.

### 1179X & 11807 SERIES SWING GATE RACKS

DES. **J. ROBERSON**

JOB NO. **11-1453**

DATE **11/17/15**

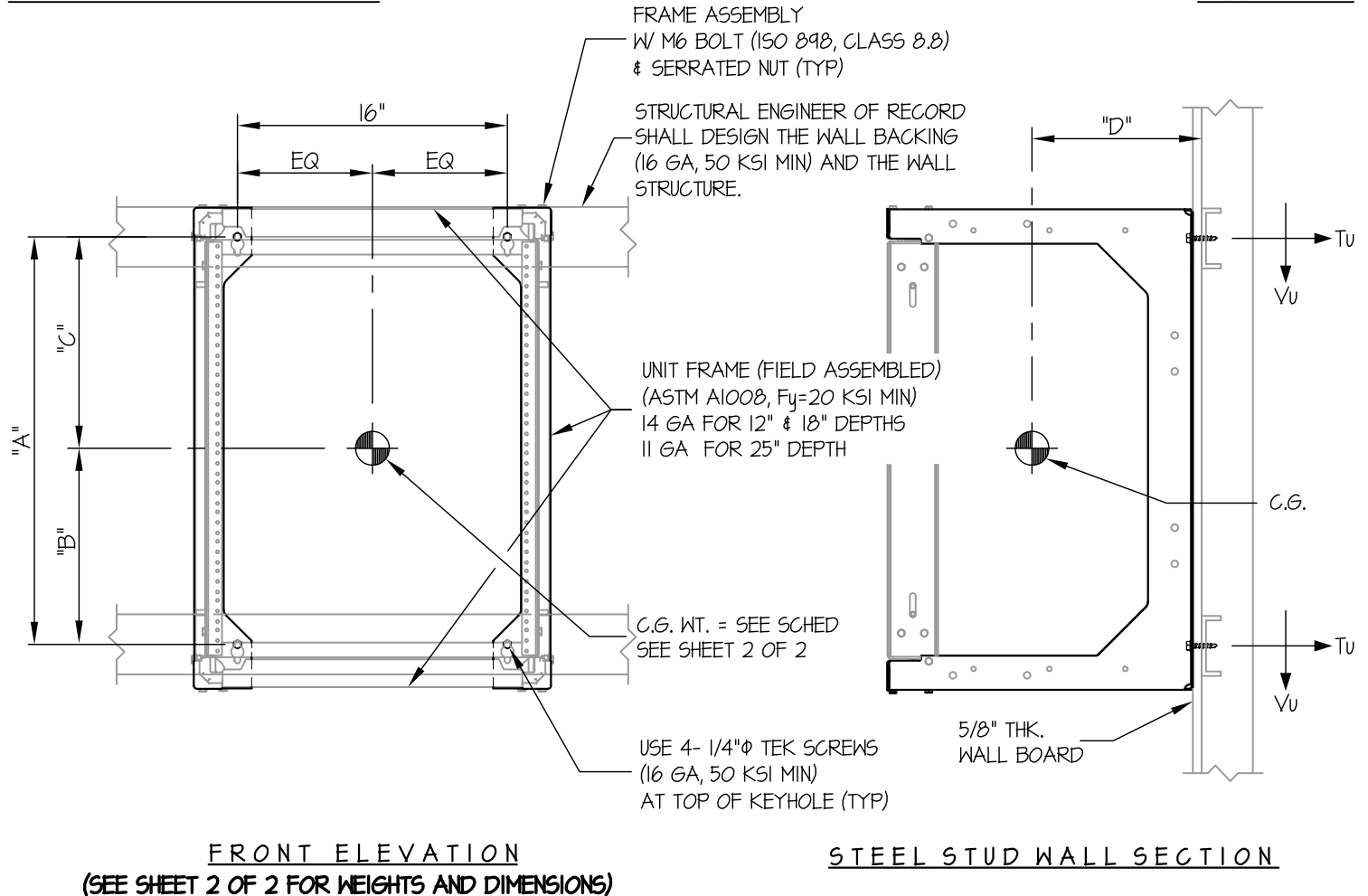
SHEET

**1**

OF **2** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



NOTES:

- FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10  
STRENGTH DESIGN IS USED. ( $S_Ds = 2.20$ ,  $a_p = 2.5$ ,  $I_p = 15$ ,  $R_p = 6.0$ ,  $z/h \leq 1$ )  
  
HORIZONTAL FORCE ( $E_h$ ) =  $1.65 W_p$   
VERTICAL FORCE ( $E_v$ ) =  $0.44 W_p$
- CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
- STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



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MODEL NO.	** WEIGHT (lb.)	"A" (in.)	"B" (in.)	"C" (in.)	"D" (in.)	T <sub>u</sub> (lb.)	V <sub>u</sub> (lb.)
11790-X12	124	24.20	11.55	12.65	9.63	121	74
11790-X18	126	24.20	11.55	12.65	14.13	173	75
* 11790-X25	137	24.20	11.55	12.65	19.43	251	82
11791-X12	128	38.20	18.55	19.65	9.63	108	76
11791-X18	130	38.20	18.55	19.65	14.13	153	77
11791-X25	142	38.20	18.55	19.65	19.43	224	84
11807-X12	131	48.70	23.80	24.90	9.63	104	77
11807-X18	133	48.70	23.80	24.90	14.13	148	78
11807-X25	146	48.70	23.80	24.90	19.43	216	86
11792-X12	138	73.20	36.05	37.15	9.63	102	81
11792-X18	140	73.20	36.05	37.15	14.13	143	82
11792-X25	156	73.20	36.05	37.15	19.43	212	91

\* UNIT USED IN CALCULATION BELOW

\*\* WEIGHT = UNIT WT + CONTENTS (100 lb MAX)

LOADS: PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10.

STRENGTH DESIGN IS USED (S<sub>ps</sub> = 2.20, a<sub>p</sub> = 2.5, l<sub>p</sub> = 1.5, R<sub>p</sub> = 6.0, z/h ≤ 1.0)

WEIGHT = 137 LB

HORIZONTAL FORCE (E<sub>h</sub>) = 1.65W<sub>p</sub> = 226 LB

VERTICAL FORCE (E<sub>v</sub>) = 0.44W<sub>p</sub> = 60 LB

SCREW FORCES: (CALCULATION IS CONSERVATIVE)

#14 TEK SCREWS TO 16 GAGE, 50 KSI

φT = 418 LB/SCREW

φV = 362 LB/SCREW

TENSION (T)

$$T_{u \text{ VERTICAL}} = \frac{(1.2(137\#) + 60\#)(19.43")}{2 \text{ SCREWS}(24.2")} = 90 \text{ LB/SCREW (TOP SCREW)}$$

$$T_{u \text{ PARALLEL}} = \frac{226\#(19.43")(12.65")}{1 \text{ SCREW (16")(24.2")}} = 143 \text{ LB/SCREW (BOTTOM SCREW)}$$

$$T_{u \text{ PERP.}} = \frac{226\#(12.65")}{2 \text{ SCREWS}(24.2")} = 59 \text{ LB/SCREW (BOTTOM SCREW)}$$

$$T_{u \text{ MAX}} = 90\# + (0.3)(59\#) + 143\# = 251 \text{ LB/SCREW (MAX)}$$

UNITY CHECK:

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

$$\left(\frac{251}{418}\right) + \left(\frac{82}{362}\right) = 0.83 \leq 1.0 \therefore \text{O.K.}$$

SHEAR (V)

$$V_{u \text{ MAX}} = \sqrt{\left(\frac{1.2(137\#) + 60\#}{4 \text{ SCREWS}}\right)^2 + \left(\frac{226\#(12.65")}{2 \text{ SCREWS}(24.2")}\right)^2} = 82 \text{ LB/SCREW (MAX)}$$