

### PREMIER MOUNTS

### P-SERIES MONITOR MOUNTS

DES. J. ROBERSON

JOB NO. 11-1703

DATE 8/16/17

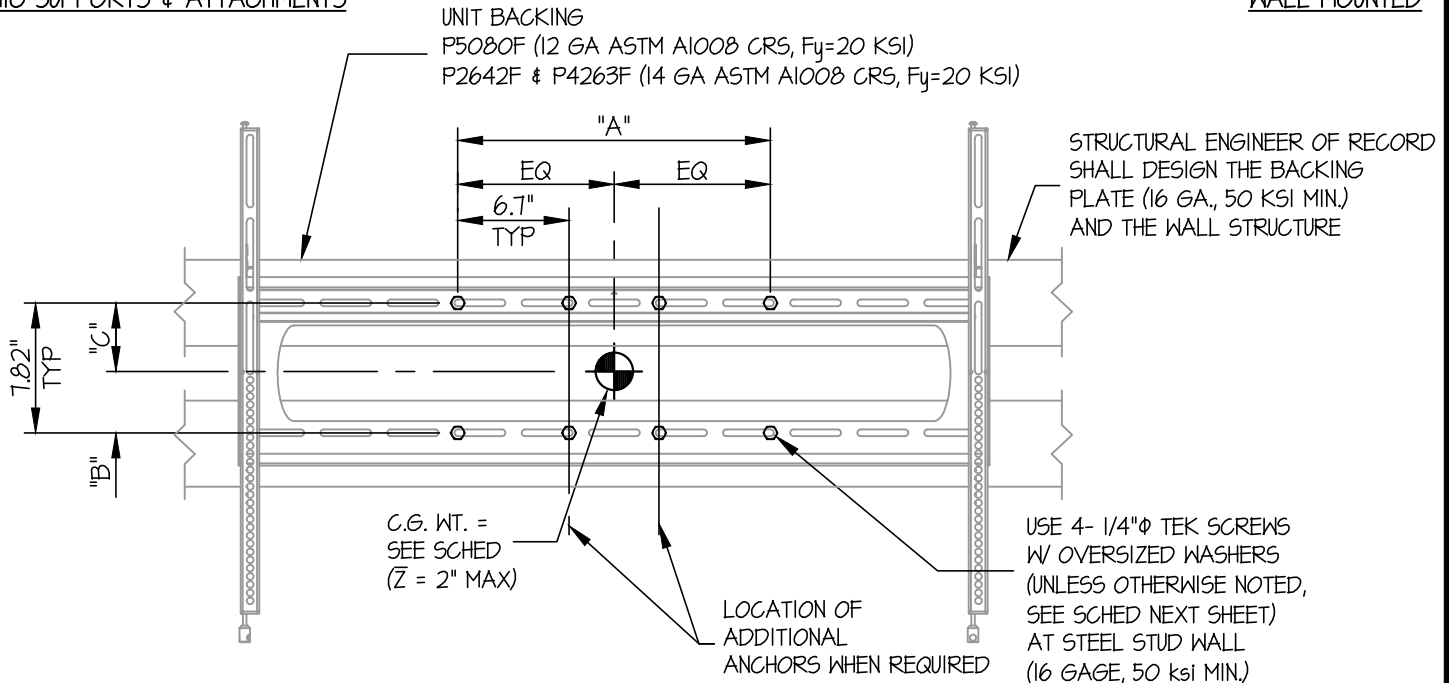
SHEET

1

OF 6 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



ELEVATION AT WALL PLATE  
(P5080F MOUNT SHOWN)

NOTES:

- FORCES ARE DETERMINED PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10

STRENGTH DESIGN IS USED. ( $S_{ds} = 2.20$ ,  $a_p = 1.0$ ,  $I_p = 1.5$ ,  $R_p = 1.5$ ,  $\Omega_o = 1.5$ ,  $z/h \leq 1$ )

HORIZONTAL FORCE ( $E_h$ ) =  $2.64 W_p$

HORIZONTAL FORCE ( $E_{mh}$ ) =  $3.96 W_p$  (FOR CONCRETE ANCHORAGE)

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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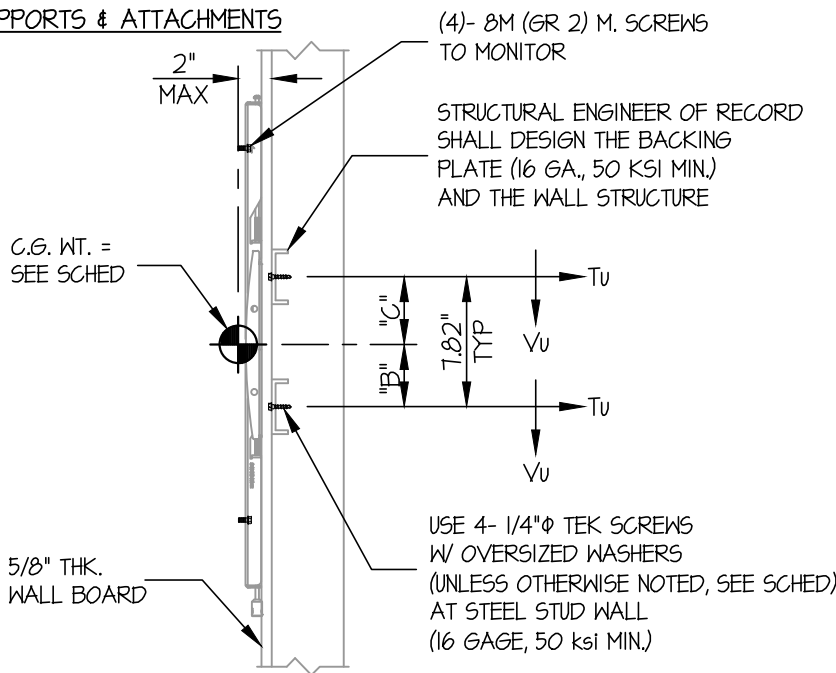
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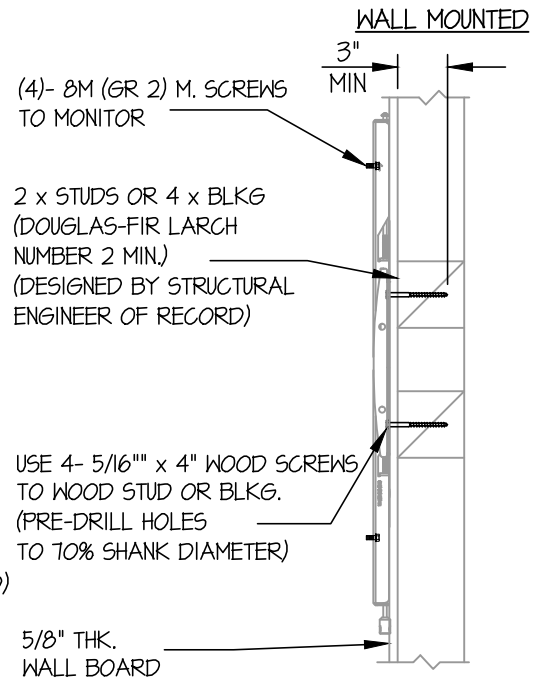
2

OF 6 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS



STEEL STUD WALL SECTION  
(P5080F MOUNT SHOWN)



WOOD STUD WALL SECTION  
(P5080F MOUNT SHOWN)

UNIT	SELF WEIGHT (lb.)	MAX MONITOR WEIGHT (lb.)	"A" (in.)	"B" (in.)	"C" (in.)	T <sub>u</sub> (lb.)	V <sub>u</sub> (lb.)	# OF SCREWS
P2642F	10	130	11.66	4.18	3.64	138	114	4
P4263F	12	175	18.66	4.22	3.6	181	154	4
* P5080F	19	300	34.98	4.24	3.58	156	132	8

\* UNIT USED IN CALCULATIONS

LOADS: PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10.

STRENGTH DESIGN IS USED (S<sub>ds</sub> = 2.20, a<sub>p</sub> = 1.0, l<sub>p</sub> = 1.5, R<sub>p</sub> = 1.5, z/h ≤ 1)

WEIGHT = 319 LB

HORIZONTAL FORCE (E<sub>h</sub>) = 264 W<sub>p</sub> = 842 LB

VERTICAL FORCE (E<sub>v</sub>) = 0.44 W<sub>p</sub> = 141 LB

SCREW FORCES:

TENSION (T) (CALCULATION SHOWS WORSE CASE VERTICAL BOLT SPACING OF 5")

$$T_{u \text{ VERTICAL}} = \frac{(12(319\#) + 141\#)(2")}{4 \text{ SCREWS}(7.82")} = 34 \text{ LB/SCREW}$$

$$T_{u \text{ PARALLEL}} = \frac{842\#(2")(4.24")}{1 \text{ SCREW}(34.98")(7.82")} = 26 \text{ LB/SCREW}$$

$$T_{u \text{ PERP.}} = \frac{842\#(4.24")}{4 \text{ SCREWS}(7.82")} = 114 \text{ LB/SCREW}$$

$$T_{u \text{ MAX}} = 34\# + (0.3)(26\#) + 114\# = 156 \text{ LB/SCREW (MAX)}$$

SHEAR (V)

$$V_{u \text{ MAX}} = \sqrt{\left(\frac{12(319\#) + 141\#}{8 \text{ SCREWS}}\right)^2 + \left(\frac{842\#(4.24")}{4 \text{ SCREWS}(7.82")}\right)^2} = 132 \text{ LB/SCREW (MAX)}$$

BOLT SPEC: 1/4"φ TEK SCREWS

φT = 418 LB/SCREW

φV = 362 LB/SCREW

UNITY CHECK:

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

$$\left(\frac{156}{418}\right) + \left(\frac{132}{362}\right) = 0.74 \leq 1.0 \therefore \text{O.K.}$$

SCREW SPEC: 5/16"φ WOOD SCREWS

φT = 724 LB/SCREW

φV = 336 LB/SCREW

UNITY CHECK:

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

$$\left(\frac{156}{724}\right) + \left(\frac{132}{336}\right) = 0.61 \leq 1.0 \therefore \text{O.K.}$$

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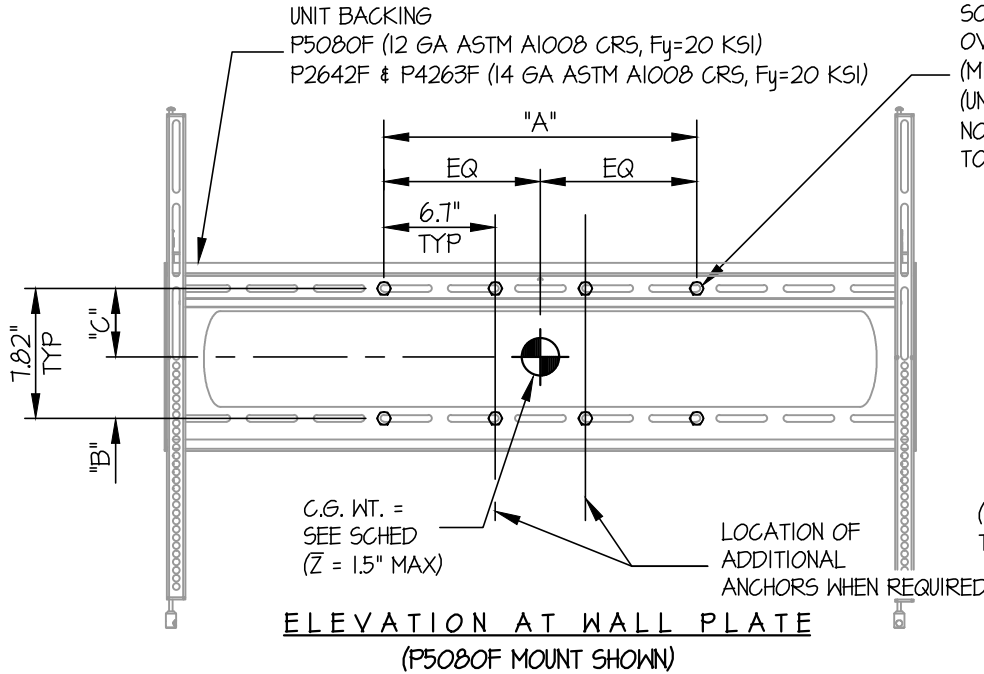
DATE 8/16/17

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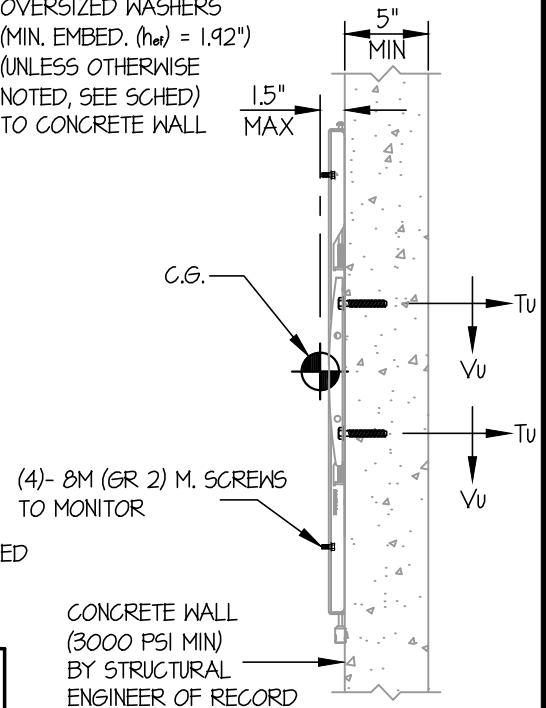
OF 6 SHEETS

#### SEISMIC SUPPORTS & ATTACHMENTS



USE 4- 1/4"  $\phi$  HILTI HUS-EZ  
SCREW ANCHORS W/  
OVERSIZED WASHERS  
(MIN. EMBED. (Net) = 1.92")  
(UNLESS OTHERWISE  
NOTED, SEE SCHED)  
TO CONCRETE WALL

#### WALL MOUNTED



#### CONCRETE WALL SECTION

UNIT	SELF WEIGHT (lb)	MAX MONITOR WEIGHT (lb)	"A" (in)	"B" (in)	"C" (in)	T <sub>u</sub> (lb)	V <sub>u</sub> (lb)	# OF SCREWS
P2642F	10	130	11.66	4.18	3.64	182	159	4
P4263F	12	175	18.66	4.22	3.6	239	214	4
* P5080F	19	300	34.98	4.24	3.58	205	183	8

\* UNIT USED IN CALCULATIONS

LOADS: PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10.

STRENGTH DESIGN IS USED ( $S_{ds} = 2.20$ ,  $a_p = 1.0$ ,  $I_p = 1.5$ ,  $R_p = 1.5$ ,  $\Omega_0 = 1.5$ ,  $z/h \leq 1$ )

WEIGHT = 319 LB

HORIZONTAL FORCE ( $E_{mh}$ ) = 3.96  $W_p = 1263$  LB

VERTICAL FORCE ( $E_v$ ) = 0.44  $W_p = 141$  LB

BOLT FORCES:

TENSION (T) (CALCULATION SHOWS WORSE CASE VERTICAL BOLT SPACING OF 5")

$$T_{u \text{ VERTICAL}} = \frac{(12(319\#) + 141\#)(1.5")}{4 \text{ SCREWS}(7.82")} = 25 \text{ LB/SCREW}$$

$$T_{u \text{ PARALLEL}} = \frac{1263\#(1.5")(4.24")}{1 \text{ SCREW}(34.98")(7.82")} = 29 \text{ LB/SCREW}$$

$$T_{u \text{ PERP.}} = \frac{1263\#(4.24")}{4 \text{ SCREWS}(7.82")} = 171 \text{ LB/SCREW}$$

$$T_{u \text{ MAX}} = 25\# + (0.3)(29\#) + 171\# = 205 \text{ LB/SCREW (MAX)}$$

SHEAR (V)

$$V_{u \text{ MAX}} = \sqrt{\left(\frac{12(319\#) + 141\#}{8 \text{ SCREWS}}\right)^2 + \left(\frac{1263\#(4.24")}{4 \text{ SCREWS}(7.82")}\right)^2} = 183 \text{ LB/SCREW (MAX)}$$

BOLT SPECS: 1/4"  $\phi$  HILTI HUS-EZ

$\phi T = 0.75 \phi N_n = 623$  LB/SCREW (TENSION)

$\phi V = \phi V_n = 836$  LB/SCREW (SHEAR)

UNITY CHECK:

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \leq 1.2$$

$$\left(\frac{205}{623}\right) + \left(\frac{183}{836}\right) = 0.55 \leq 1.2 \therefore \text{O.K.}$$

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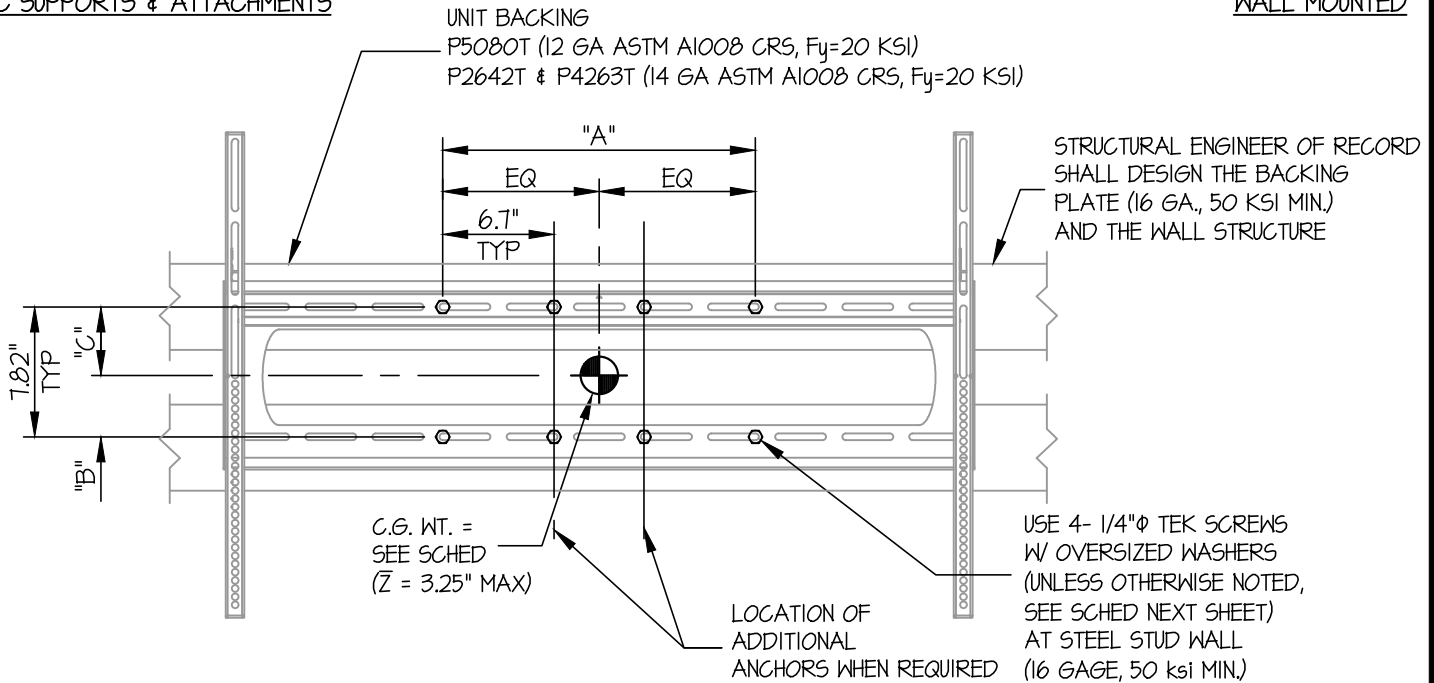
SHEET

4

OF 6 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



ELEVATION AT WALL PLATE  
(P5080T MOUNT SHOWN)

NOTES:

- FORCES ARE DETERMINED PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10

STRENGTH DESIGN IS USED. ( $S_{Ds} = 2.20$ ,  $a_p = 1.0$ ,  $I_p = 1.5$ ,  $R_p = 1.5$ ,  $\Omega_o = 1.5$ ,  $z/h \leq 1$ )

HORIZONTAL FORCE ( $E_h$ ) =  $2.64 W_p$

HORIZONTAL FORCE ( $E_{mh}$ ) =  $3.96 W_p$  (FOR CONCRETE ANCHORAGE)

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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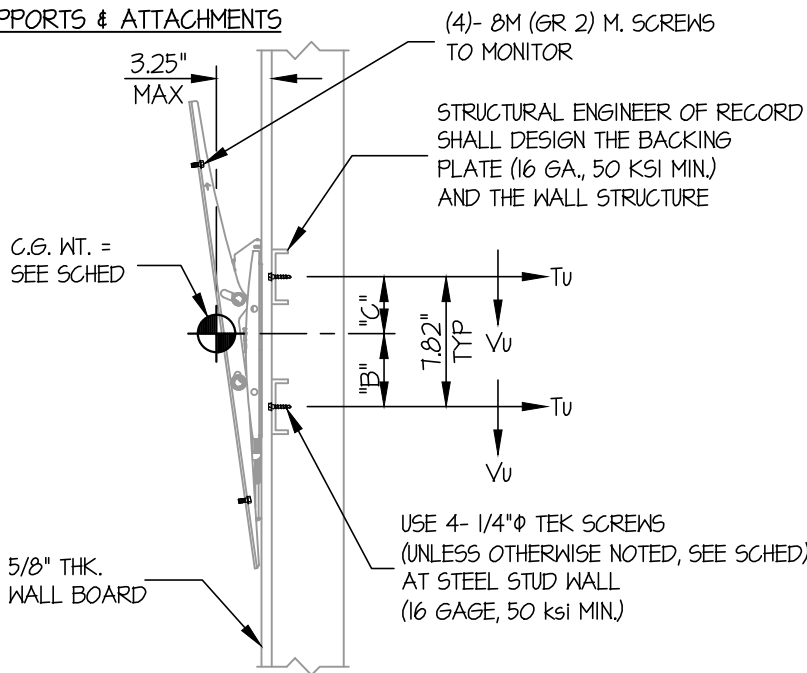
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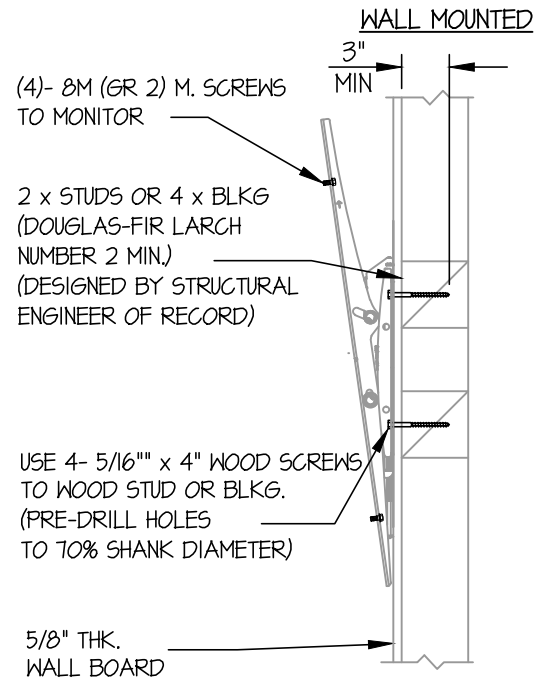
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OF 6 SHEETS

#### SEISMIC SUPPORTS & ATTACHMENTS



**STEEL STUD WALL SECTION**  
(P5080T MOUNT SHOWN)



**WOOD STUD WALL SECTION**  
(P5080T MOUNT SHOWN)

UNIT	SELF WEIGHT (lb.)	MAX MONITOR WEIGHT (lb.)	"A" (in.)	"B" (in.)	"C" (in.)	T <sub>u</sub> (lb.)	V <sub>u</sub> (lb.)	# OF SCREWS
P2642T	12	130	11.66	4.73	3.09	181	127	4
P4263T	15	175	18.66	4.74	3.08	124	85	8
* P5080T	22	300	34.98	4.77	3.05	199	145	8

\* UNIT USED IN CALCULATIONS

**LOADS:** PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10.

STRENGTH DESIGN IS USED (S<sub>ds</sub> = 2.20, a<sub>p</sub> = 1.0, l<sub>p</sub> = 1.5, R<sub>p</sub> = 1.5, z/h ≤ 1)

WEIGHT = 322 LB

HORIZONTAL FORCE (E<sub>h</sub>) = 264 W<sub>p</sub> = 850 LB

VERTICAL FORCE (E<sub>v</sub>) = 0.44 W<sub>p</sub> = 142 LB

**SCREW FORCES:**

TENSION (T) (CALCULATION SHOWS WORSE CASE VERTICAL BOLT SPACING OF 5")

$$T_{u \text{ VERTICAL}} = \frac{(12(322\#) + 142\#)(3.25")}{4 \text{ SCREWS}(7.82")} = 55 \text{ LB/SCREW}$$

$$T_{u \text{ PARALLEL}} = \frac{850\#(3.25")(4.77")}{1 \text{ SCREW}(34.98")(7.82")} = 48 \text{ LB/SCREW}$$

$$T_{u \text{ PERP.}} = \frac{850\#(4.77")}{4 \text{ SCREWS}(7.82")} = 130 \text{ LB/SCREW}$$

$$T_{u \text{ MAX}} = 55\# + (0.3)(48\#) + 130\# = 199 \text{ LB/SCREW (MAX)}$$

SHEAR (V)

$$V_{u \text{ MAX}} = \sqrt{\left(\frac{12(322\#) + 142\#}{8 \text{ SCREWS}}\right)^2 + \left(\frac{850\#(4.77")}{4 \text{ SCREWS}(7.82")}\right)^2} = 145 \text{ LB/SCREW (MAX)}$$

**BOLT SPEC:** 1/4"φ TEK SCREWS

φT = 418 LB/SCREW

φV = 362 LB/SCREW

**UNITY CHECK:**

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

$$\left(\frac{199}{418}\right) + \left(\frac{145}{362}\right) = 0.88 \leq 1.0 \therefore \text{O.K.}$$

**SCREW SPEC:** 5/16"φ WOOD SCREWS

φT = 724 LB/SCREW

φV = 336 LB/SCREW

**UNITY CHECK:**

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

$$\left(\frac{199}{724}\right) + \left(\frac{145}{336}\right) = 0.71 \leq 1.0 \therefore \text{O.K.}$$

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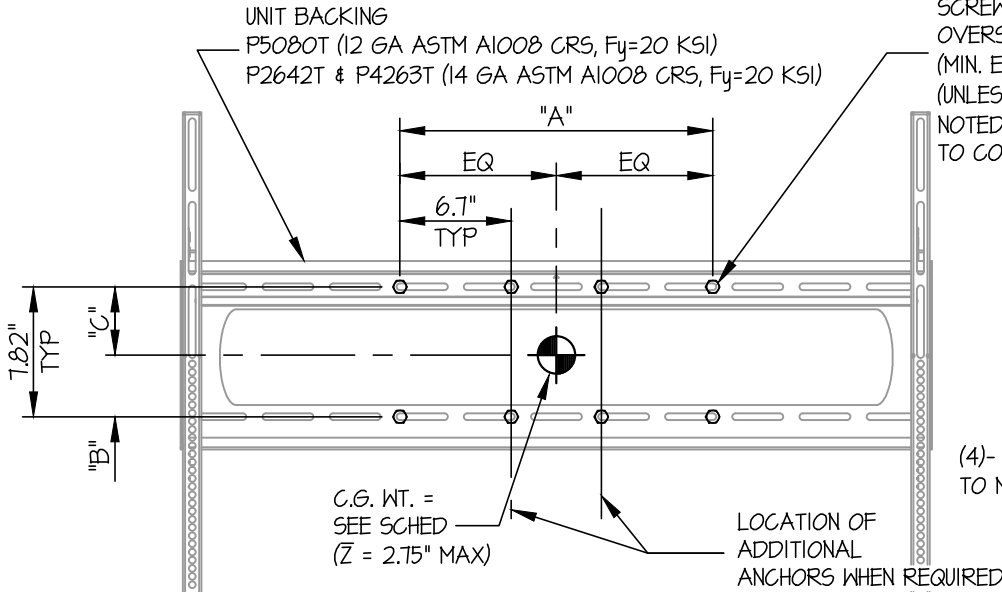
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OF 6 SHEETS

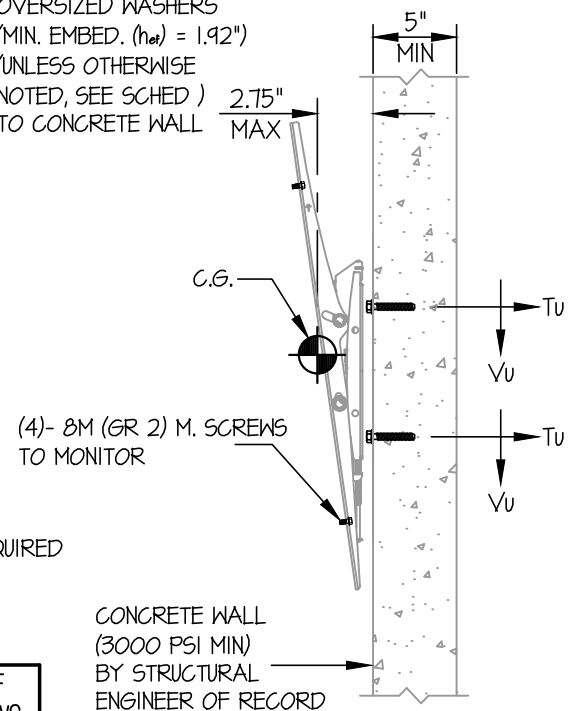
#### SEISMIC SUPPORTS & ATTACHMENTS



ELEVATION AT WALL PLATE  
(P5080T MOUNT SHOWN)

USE 4- 1/4"Φ HILTI HUS-EZ SCREW ANCHORS W/ OVERSIZED WASHERS (MIN. EMBED. (h<sub>er</sub>) = 1.92") (UNLESS OTHERWISE NOTED, SEE SCHED) TO CONCRETE WALL 2.75" MAX

#### WALL MOUNTED



CONCRETE WALL SECTION

UNIT	SELF WEIGHT (lb.)	MAX MONITOR WEIGHT (lb.)	"A" (in.)	"B" (in.)	"C" (in.)	Tu (lb.)	Vu (lb.)	# OF SCREWS
P2642T	12	130	11.66	4.73	3.09	235	180	4
P4263T	15	175	18.66	4.74	3.08	303	241	4
* P5080T	22	300	34.98	4.77	3.05	259	205	8

\* UNIT USED IN CALCULATIONS

LOADS: PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10.

STRENGTH DESIGN IS USED (S<sub>ds</sub> = 2.20, a<sub>p</sub> = 10, I<sub>p</sub> = 15, R<sub>p</sub> = 15, Ω<sub>e</sub> = 1.5, z/h ≤ 1)

WEIGHT = 322 LB

HORIZONTAL FORCE (E<sub>mh</sub>) = 3.96 W<sub>p</sub> = 1275 LB

VERTICAL FORCE (E<sub>v</sub>) = 0.44 W<sub>p</sub> = 142 LB

BOLT FORCES:

TENSION (T) (CALCULATION SHOWS WORSE CASE VERTICAL BOLT SPACING OF 5")

$$T_{u \text{ VERTICAL}} = \frac{(12(322\#) + 142\#)(2.75")}{4 \text{ SCREWS}(7.82")} = 47 \text{ LB/SCREW}$$

$$T_{u \text{ PARALLEL}} = \frac{1275\#(2.75")(4.77")}{1 \text{ SCREW}(34.98")(7.82")} = 61 \text{ LB/SCREW}$$

$$T_{u \text{ PERP.}} = \frac{1275\#(4.77")}{4 \text{ SCREWS}(7.82")} = 194 \text{ LB/SCREW}$$

$$T_{u \text{ MAX}} = 47\# + (0.3)(61\#) + 194\# = 259 \text{ LB/SCREW (MAX)}$$

SHEAR (V)

$$V_{u \text{ MAX}} = \sqrt{\left(\frac{12(322\#) + 142\#}{8 \text{ SCREWS}}\right)^2 + \left(\frac{1275\#(4.77")}{4 \text{ SCREWS}(7.82")}\right)^2} = 205 \text{ LB/SCREW (MAX)}$$

BOLT SPECS: 1/4"Φ HILTI HUS-EZ

φT = 0.75 φN<sub>t</sub> = 623 LB/SCREW (TENSION)

φV = φV<sub>n</sub> = 836 LB/SCREW (SHEAR)

UNITY CHECK:

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \leq 1.2$$

$$\left(\frac{259}{623}\right) + \left(\frac{205}{836}\right) = 0.66 \leq 1.2 \therefore \text{O.K.}$$