



**EASE**  
**EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING**  
2801 Connery Way, Suite B  
Missoula, MT 59808  
Phn: (406) 541-EASE (3273) Fax: (406) 541-3274

Sheet 1 of 4

**Office of Statewide Health Planning and Development**  
**ANCHORAGE PRE-APPROVAL**

**OPA-1566**

Equipment Manufacturer: Mac Medical

Equipment Type: Single Warming Cabinet - 74.5" High

**GENERAL NOTES**

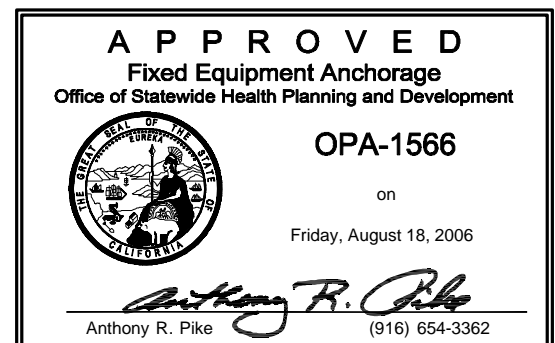
**1. EXPANSION ANCHORS:**

- (a) ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICBO REPORT.

Anchor Diameter	Concrete Type	Min. f <sub>c</sub> (psi)	Anchor Type	ICBO Report No.	Min. Embedment (inches)	Test Loads	
3/8"	Hardrock	3000	Hilti Kwik Bolt III	ESR-1385	3	Direct Pull Tension - 1100 lbs	Torque 25 Ft-Lbs

**2. TESTING OF EXPANSION ANCHORS:**

- (a) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST OR TORQUE TEST AT LEAST 50% OF THE ANCHORS.
- (b) ACCEPTANCE CRITERIA:
- (1) DIRECT PULL TENSION TEST:  
THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE TEST LOAD. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER BECOMES LOOSE.
- (2) TORQUE TEST: THE SPECIFIED TORQUE MUST BE REACHED WITHIN ONE-HALF (1/2) TURN OF THE NUT.
- (3) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.





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**ANCHORAGE PRE-APPROVAL**

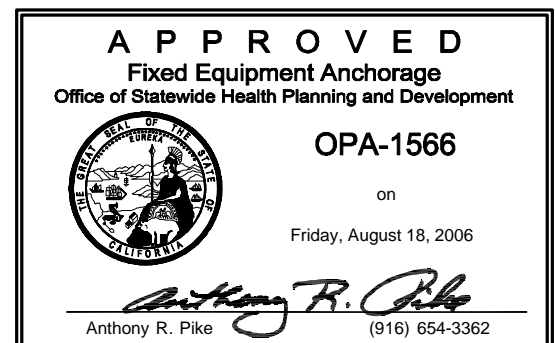
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**GENERAL NOTES (CONTINUED)**

3. FORCES ARE DETERMINED PER 2001 CBC 1632A.2, EQUATIONS 32-A1, A2 & A3, WHERE  $C_a = .66$ ,  $a_p = 1.0$ ,  $I_p = 1.5$   
 $R_p = 3.0$ .  
PLEASE NOTE THAT THE RESULT FROM EQUATIONS 32-A1, A2 & A3  
HAVE BEEN REDUCED BY A FACTOR OF 1.4 FOR ALLOWABLE STRESS DESIGN.
4. THIS PRE-APPROVAL CONFORMS TO THE 2001 CALIFORNIA BUILDING CODE.
5. THE DETAILS IN THIS PRE-APPROVAL MAY BE USED AT ANY LOCATION AND AT ANY HEIGHT IN THE STATE OF CALIFORNIA.
6. THE ENGINEER OF RECORD SHALL DESIGN BACKING BARS, STUDS, ETC.  
WHICH THE UNITS ARE ATTACHED TO AS NOTED ON THE DRAWINGS. THE ENGINEER OF RECORD  
SHALL ALSO VERIFY THE ADEQUACY OF THE STRUCTURES (SUCH AS WALLS AND FLOORS)  
WHICH SUPPORT THE UNITS FOR THE LOADS IMPOSED ON THEM BY THE UNITS AS WELL AS ALL OTHER LOADS.
7. ALL ANCHOR FORCES SHOWN ON THE DRAWINGS ARE WORKING LOADS (AS OPPOSED TO ULTIMATE LOADS)  
AND MAY BE USED FOR ALLOWABLE STRENGTH DESIGN.



**MAC MEDICAL**

DES. **R. LA BRIE**

JOB NO. **11-0653**

DATE **8/14/06**

SHEET

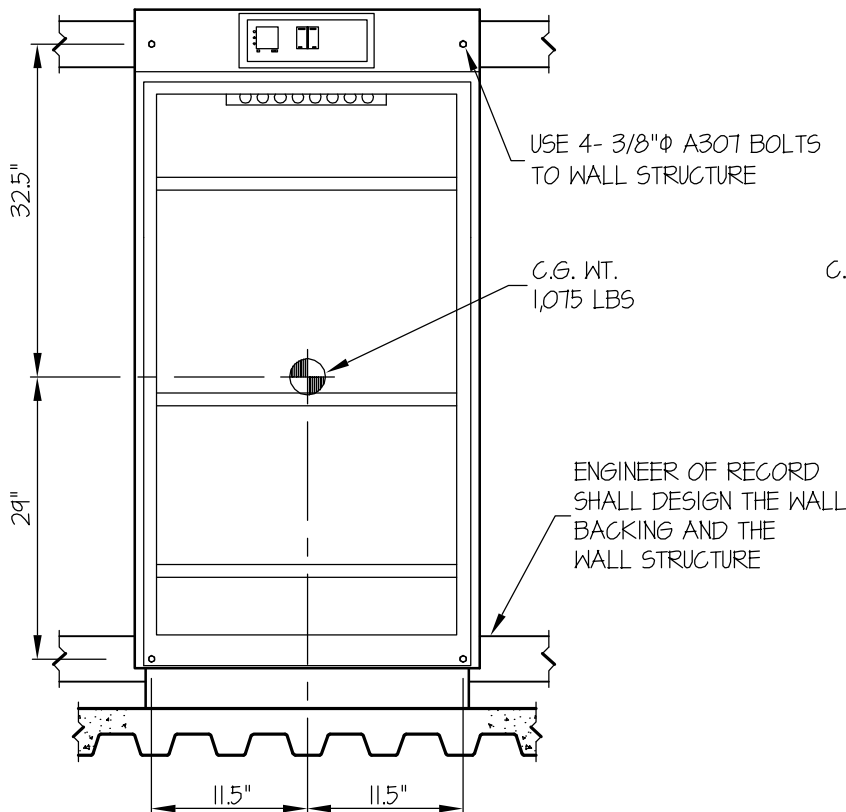
**3**

OF **4** SHEETS

**SINGLE WARMING CABINET - 74.5" HIGH**

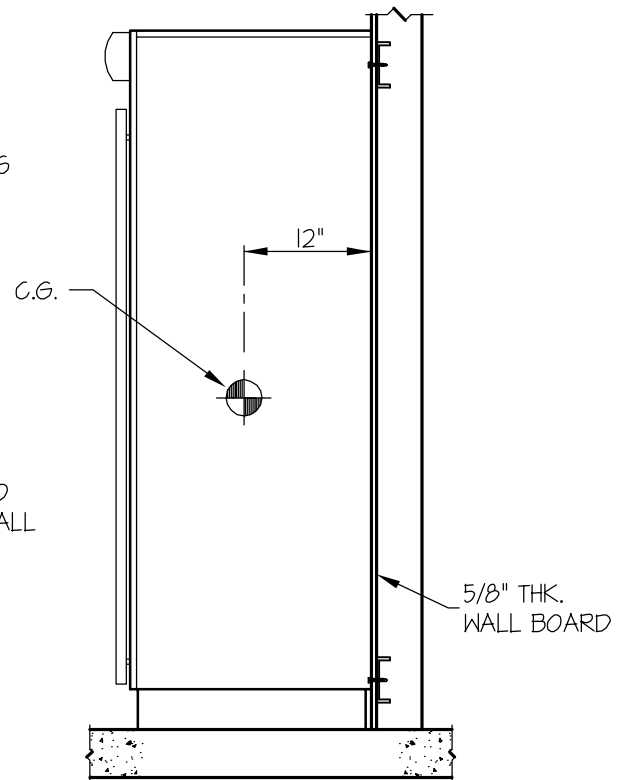
SEISMIC ANCHORAGE PRE-APPROVAL

SLAB ON GRADE & UPPER FLOOR



**FRONT ELEVATION**

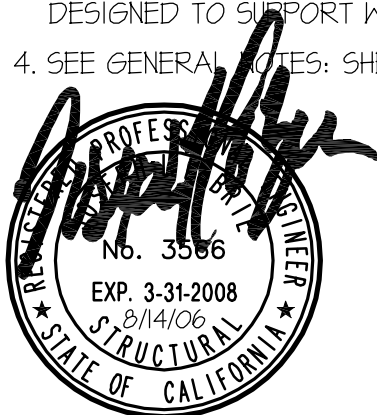
$T_{MAX} = 386 \text{ LBS/BOLT}$   
 $V_{MAX} = 267 \text{ LBS/BOLT}$



**SIDE ELEVATION**

NOTES:

1. ANCHORAGE DESIGN PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.  
HORIZONTAL FORCE ( $V_H$ ) =  $0.94W$  ( $C_a = .66$ ,  $I_p = 1.5$ ,  $a_p = 1.0$ ,  $R_p = 3.0$ )  
VERTICAL FORCE ( $V_V$ ) =  $0.33(V_H)$
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS.
4. SEE GENERAL NOTES: SHEET 1



**MAC MEDICAL**

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**SINGLE WARMING CABINET - 74.5" HIGH**

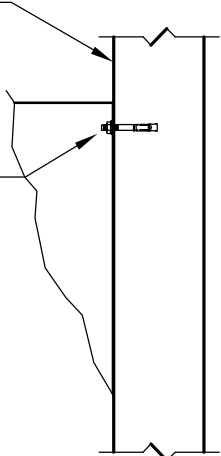
SEISMIC ANCHORAGE PRE-APPROVAL

SLAB ON GRADE & UPPER FLOOR

MOUNTING WALL TYPE:

CONCRETE WALL  
(3000 PSI MIN)  
BY ENGINEER OF  
RECORD

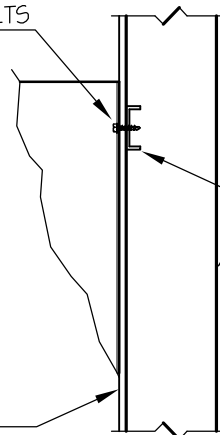
USE 4- 3/8"  $\phi$  HILTI KBIII  
EXPANSION ANCHORS  
(MIN. EMBED. = 3")



CONCRETE WALL

USE 4- #3/8" A307 BOLTS  
TO WALL BACKING

5/8" THK.  
WALL BOARD

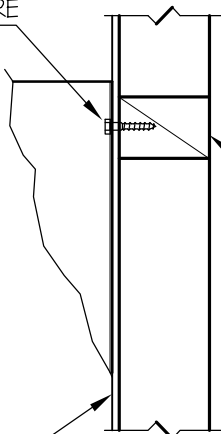


WALL BACKING, IT'S  
CONNECTION TO THE  
WALL STRUCTURE AND  
THE WALL STRUCTURE  
ITSELF, SHALL BE  
DESIGNED BY ENGINEER  
OF RECORD

STEEL STUD WALL

USE 4- 3/8" x 4" LAG  
BOLTS TO WOOD STRUCTURE  
(PRE-DRILL HOLES TO  
SHANK DIAMETER)

5/8" THK.  
WALL BOARD



4X BLOCKING  
(DOUG-FIR LARCH  
NUMBER 2 MINIMUM)  
WOOD STRUCTURE  
(BY ENGINEER  
OF RECORD)

WOOD STUD WALL



**A P P R O V E D**

Fixed Equipment Anchorage  
Office of Statewide Health Planning and Development



**OPA-1566**

on

Friday, August 18, 2006

*Anthony R. Pike*  
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