



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

**OPA-2607-10**

**THIS PRE- APPROVAL CONFORMS TO THE 2010 CALIFORNIA BUILDING CODE**

Equipment Manufacturer: Terrawave Solutions

Equipment Type: 24x24 Ceiling Enclosure

**GENERAL NOTES**

1. FORCES PER ASCE 7-05 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE  $S_{ds} = 2.00$ ,  $a_p = 2.5$ ,  $I_p = 1.5$ ,  $R_p = 2.5$  &  $z/h \leq 1.0$
2. THIS PRE-APPROVAL CONFORMS TO THE 2010 CALIFORNIA BUILDING CODE.
3. THE DETAILS IN THIS PRE-APPROVAL MAY BE USED AT ANY LOCATION AND AT ANY HEIGHT IN THE STATE OF CALIFORNIA, WHERE SDS IS NOT GREATER THAN 2.00.
4. ALL ANCHOR FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.
5. THIS PRE-APPROVAL COVERS ONLY THE ANCHORAGE OF THE UNIT TO A SUPPORT STRUCTURE ABOVE BY OTHERS .

**RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING**

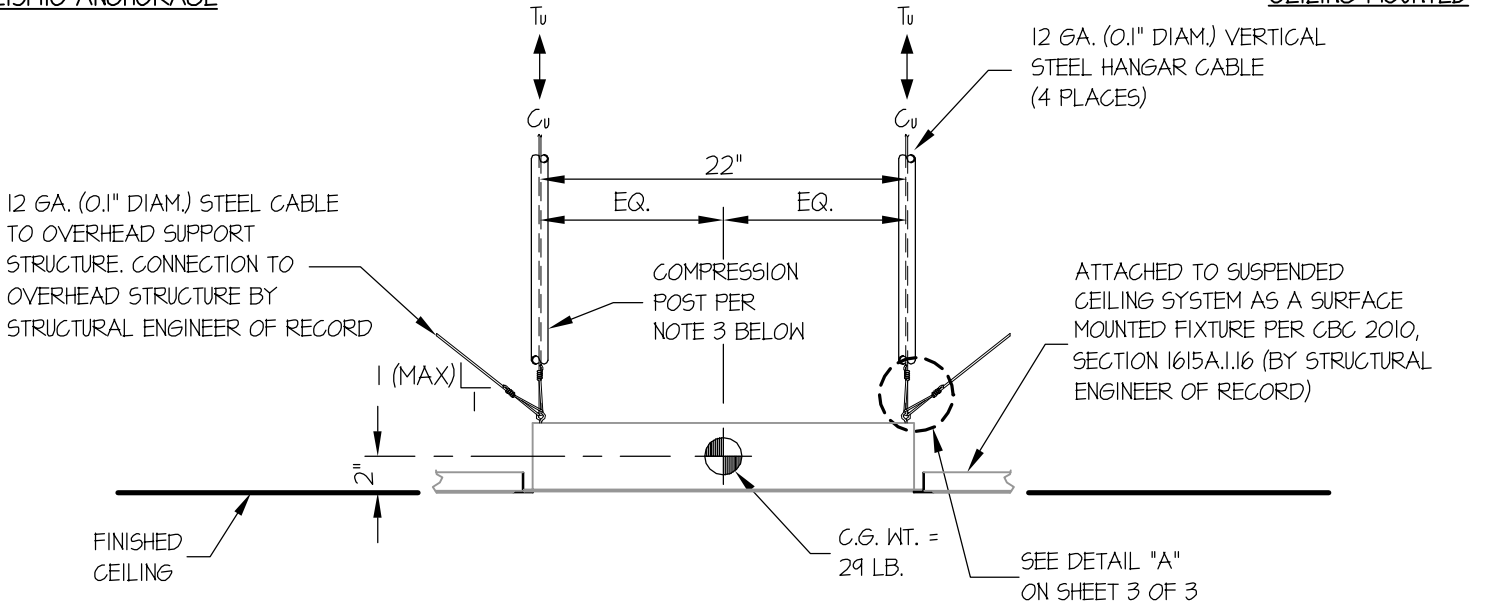
6. THE SEOR SHALL ALSO VERIFY THE ADEQUACY OF THE STRUCTURES (SUCH AS WALLS AND FLOORS) WHICH SUPPORT THE UNITS FOR THE LOADS IMPOSED ON THEM BY THE UNITS AS WELL AS ALL OTHER LOADS.
7. PROVIDE SUPPORTING STRUCTURE REQUIRED TO SUPPORT WEIGHTS AND FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS.
8. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2010 CBC AND WITH THE DETAILS SHOWN IN THIS PRE-APPROVAL. VERIFY THAT THE ACTUAL EQUIPMENT'S WEIGHT, CG LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS AND THE MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PRE-APPROVAL DOCUMENTS.
9. VERIFY THAT THE COMBINATION OF  $S_{ds}$  &  $z/h$  RESULT IN SEISMIC FORCES ( $E_h$  ,  $E_v$ ) THAT ARE NOT GREATER THAN THE VALUES ON THE DETAILS.



<h1>TERRAWAVE SOLUTIONS</h1> <h2>24 x 24 CEILING ENCLOSURE</h2>	DES. <b>J. ROBERSON</b>	SHEET <h1>2</h1> OF <b>3</b> SHEETS
	JOB <b>11-1059</b>	
	DATE <b>8/8/12</b>	

SEISMIC ANCHORAGE

CEILING MOUNTED



**FRONT ELEVATION**

$T_v = 12 \text{ LB/CABLE (MAX)(HANGAR CABLE)}$   
 $T_v = 74 \text{ LB/CABLE (MAX)(BRACING CABLE)}$

**NOTES:**

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

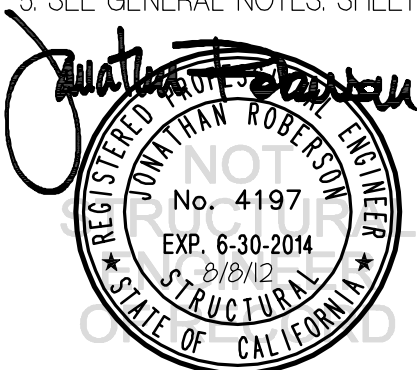
HORIZONTAL FORCE ( $E_H$ ) =  $3.60 W_p$  ( $S_{DS} = 2.00$ ,  $a_p = 2.5$ ,  $I_p = 1.5$ ,  $R_p = 2.5$ ,  $z/h_L < 10$ )  
 VERTICAL FORCE ( $E_v$ ) =  $0.40 W_p$

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 (INCLUDING COMPRESSION POST AT EACH CORNER) TO SUPPORT WEIGHTS AND FORCES SHOWN, POST MUST BE INSTALLED TIGHT AGAINST UNIT BELOW AND THE STRUCTURE ABOVE TYP.

4. FIXTURE SHALL BE ATTACHED TO THE MAIN RUNNER WITH AT LEAST TWO POSITIVE CLAMPING DEVICES MADE OF MATERIAL WITH A MINIMUM OF 14 GA; ROTATIONAL SPRING DEVICES DO NOT COMPLY. A 12 GA SUSPENSION WIRE SHALL BE ATTACHED TO EACH CLAMPING DEVICE AND TO THE STRUCTURE ABOVE.

5. SEE GENERAL NOTES: SHEET 1



**APPROVED**  
 Fixed Equipment Anchorage  
 Office of Statewide Health Planning and Development

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Pre-approval Program Manager:  
 Anthony R. Pike  
 (916) 440-8470

Reviewed By: Jeffrey Y. Kikumoto      8/8/12

**TERRAWAVE SOLUTIONS**

**24 x 24 CEILING ENCLOSURE**

DES. **J. ROBERSON**

JOB **11-1059**

DATE **8/8/12**

SHEET

**3**

OF **3** SHEETS

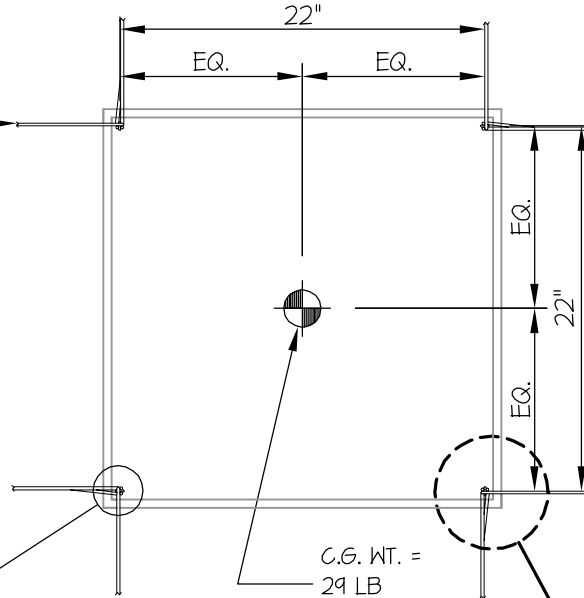
SEISMIC ANCHORAGE

CEILING MOUNTED

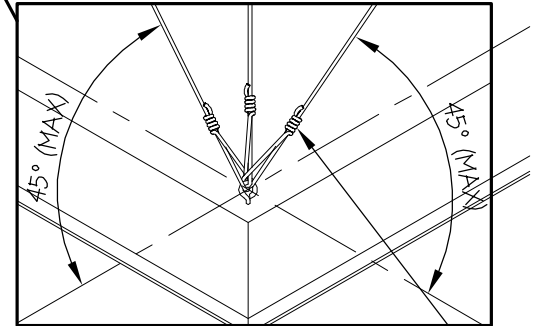
12 GA. (0.1" DIAM.) STEEL CABLE  
 TO OVERHEAD SUPPORT  
 STRUCTURE. CONNECTION TO  
 OVERHEAD STRUCTURE BY  
 STRUCTURAL ENGINEER OF RECORD

12 GA. (0.1" DIAM.) VERTICAL  
 STEEL HANGAR CABLE  
 (4 PLACES)

C.G. WT. =  
 29 LB  
 ( $\bar{r} = 18"$ )



**PLAN AT BASE**



NOTE: PROVIDE 4 TIGHT TURNS WITHIN  
 3" LENGTH AT WIRE CONNECTION (TYP.)

**DETAIL "A"**



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