



**EASE**  
**EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING**  
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**Office of Statewide Health Planning and Development**  
**ANCHORAGE PRE-APPROVAL**

**OPA-2142-07**

Equipment Manufacturer: Milestone Inc.

Equipment Type: CMS-445 Projector Mount

**GENERAL NOTES**

1. FORCES PER ASCE 7-05 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE  $S_{DS} = 1.93$ ,  $a_p = 2.5$ ,  $I_p = 1.5$  &  $R_p = 2.5$
2. THIS PRE-APPROVAL CONFORMS TO THE 2007 CALIFORNIA BUILDING CODE.
3. THE DETAILS IN THIS PRE-APPROVAL MAY BE USED AT ANY HEIGHT AND AT ANY LOCATION IN THE STATE OF CALIFORNIA.
4. ALL ANCHOR FORCES SHOWN ON THE DRAWINGS ARE WORKING LOADS (AS OPPOSED TO STRENGTH LEVEL LOADS) AND MAY BE USED FOR ALLOWABLE STRESS DESIGN.
5. SHEET METAL SCREWS SHALL BE TEKS SCREWS BY ITW BUILDEX (ICC ESR-1976).
6. PER CAN 2-1708A.5, THIS UNIT DOES NOT REQUIRE "SPECIAL SEISMIC CERTIFICATION".

**RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD**

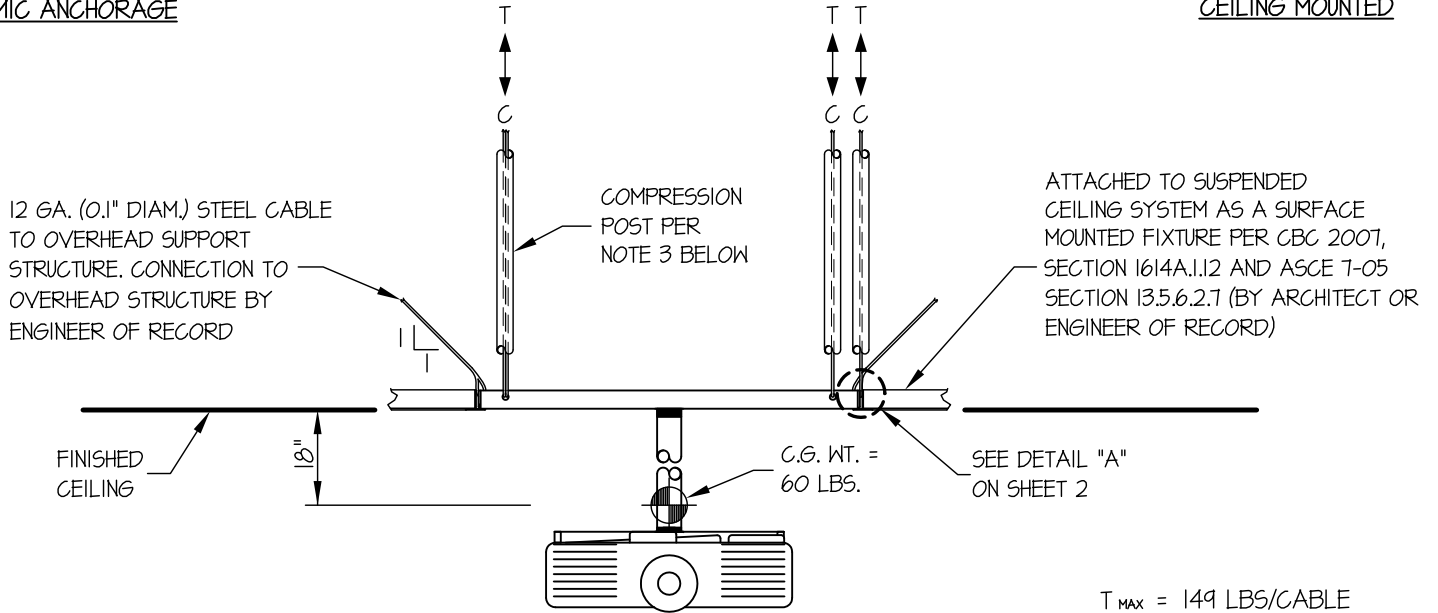
7. DESIGN BACKING BARS, STUDS, ETC. WHICH THE UNITS ARE ATTACHED TO AS NOTED ON THE DRAWINGS. THE SEOR SHALL ALSO VERIFY THE ADEQUACY OF THE STRUCTURES (SUCH AS WALLS AND FLOORS) WHICH SUPPORT THE UNITS FOR THE LOADS IMPOSED ON THEM BY THE UNITS AS WELL AS ALL OTHER LOADS.
8. PROVIDE ANY SUPPORTING STRUCTURE REQUIRED TO SUPPORT WEIGHTS AND FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS.
9. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2007 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.



<b>EASE</b> EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING www.equipmentanchorage.com  <b>MILESTONE INC.</b>  <b>CMS-445 PROJECTOR MOUNT</b>	DES. <b>R. LA BRIE</b>	SHEET <b>2</b>
	JOB <b>11-0898</b>	OF <b>3</b> SHEETS
	DATE <b>10/27/09</b>	

SEISMIC ANCHORAGE

CEILING MOUNTED



T<sub>MAX</sub> = 149 LBS/CABLE  
 C<sub>MAX</sub> = 137 LBS/POST

FRONT ELEVATION

NOTES:

- ANCHORAGE DESIGN PER 2007 CALIFORNIA BUILDING CODE - SECTION 1613A AND ASCE 7-05 SECTIONS 12 AND 13. ALLOWABLE STRESS DESIGN IS USED.  
 HORIZONTAL FORCE ( $E_H$ ) =  $2.43 W_p$  ( $S_{DS} = 1.93, a_p = 2.5, I_p = 1.5, R_p = 2.5$ )  
 VERTICAL FORCE ( $E_v$ ) =  $0.27 W_p$
- CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
- ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE ( INCLUDING COMPRESSION POST AT EACH CORNER ) DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS.
- SEE GENERAL NOTES: SHEET 1



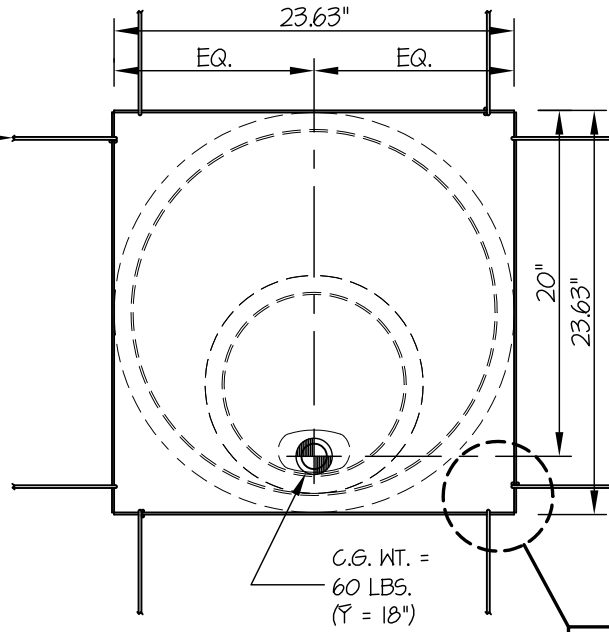
<b>A P P R O V E D</b>	
Fixed Equipment Anchorage	
Office of Statewide Health Planning and Development	
<b>OPA-2142-07</b>	
Pre-approval Program Manager: Anthony R. Pike (916) 440-8470	
Reviewed By: Jerry Yee	10/27/09

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	<b>JOB 11-0898</b>	<b>OF 3 SHEETS</b>
	<b>DATE 10/27/09</b>	
<b>MILESTONE INC.</b>		
<b>CMS-445 PROJECTOR MOUNT</b>		

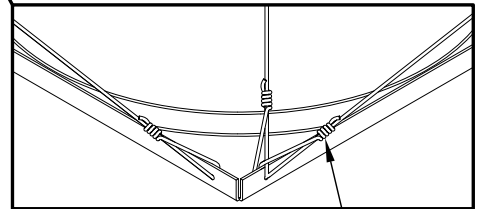
SEISMIC ANCHORAGE

CEILING MOUNTED

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



PLAN AT BASE



NOTE: PROVIDE 4 TIGHT TURNS AT WIRE CONNECTION (TYP.)

DETAIL "A"



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Office of Statewide Health Planning and Development	
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**MILESTONE INC.**

**CMS-445 PROJECTOR MOUNT**

DES. **R. LA BRIE**

JOB **11-0898**

DATE **10/27/09**

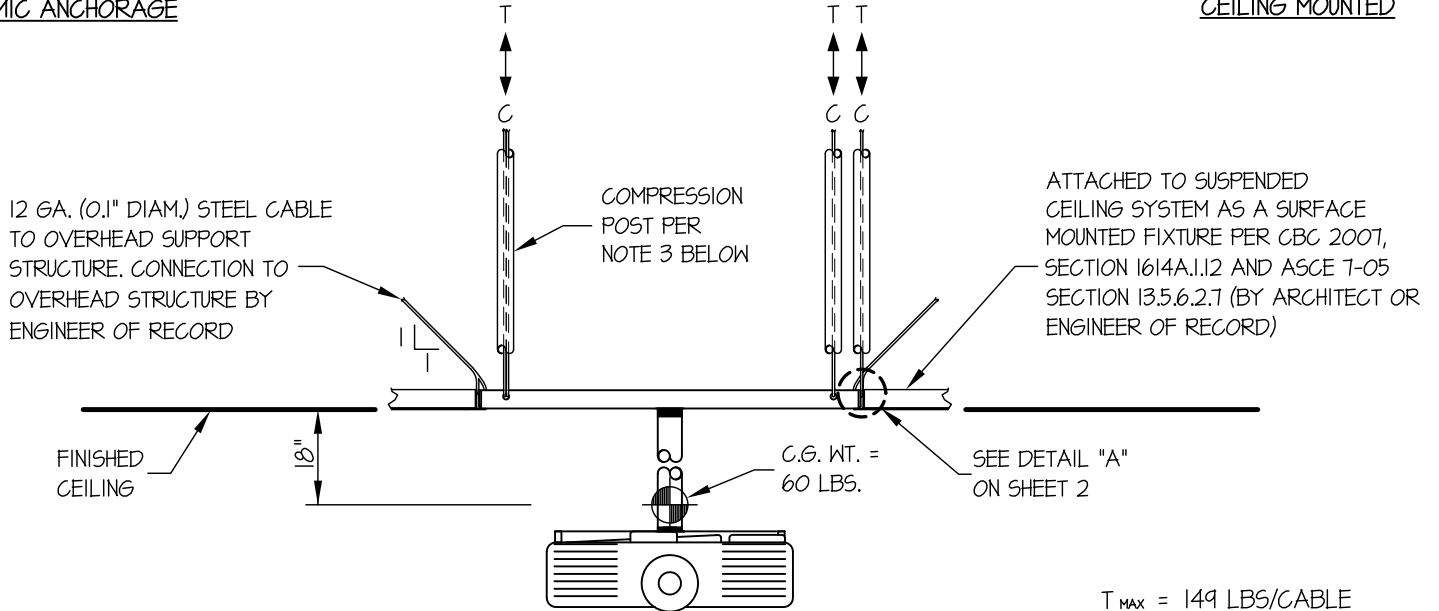
SHEET

**1**

OF **2** SHEETS

SEISMIC ANCHORAGE

CEILING MOUNTED



$T_{MAX} = 149 \text{ LBS/CABLE}$   
 $C_{MAX} = 137 \text{ LBS/POST}$

**FRONT ELEVATION**

**NOTES:**

1. FORCES ARE DETERMINED PER 2007 CALIFORNIA BUILDING CODE SECTION 1613A AND ASCE 7-05 SECTIONS 12 AND 13. ALLOWABLE STRESS DESIGN IS USED.


HORIZONTAL FORCE ( $E_H$ ) =  $2.43 W_p$  ( $S_{DS} = 1.93$ ,  $a_p = 2.5$ ,  $I_p = 15$ ,  $R_p = 2.5$ )

VERTICAL FORCE ( $E_v$ ) =  $0.27 W_p$

2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. ARCHITECT OR STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE SUPPORT STRUCTURE ( INCLUDING COMPRESSION POST AT EACH CORNER ) TO SUPPORT WEIGHTS AND FORCES SHOWN.

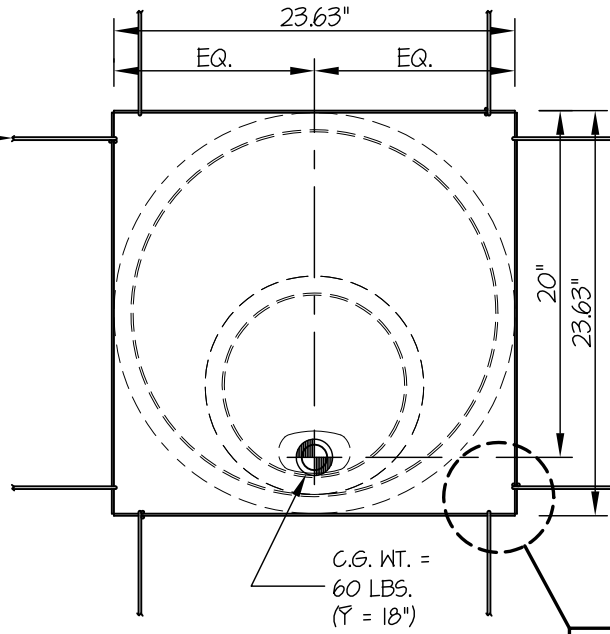


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	<b>MILESTONE INC.</b>	JOB <b>11-0898</b>	OF <b>2</b> SHEETS
	<b>CMS-445 PROJECTOR MOUNT</b>	DATE <b>10/27/09</b>	

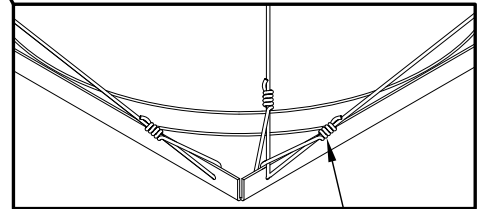
SEISMIC ANCHORAGE

CEILING MOUNTED

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PLAN AT BASE



NOTE: PROVIDE 4 TIGHT TURNS AT WIRE CONNECTION (TYP.)

DETAIL "A"

LOADS:

WEIGHT = 60 LBS (INCLUDES 50# MAX PROJECTOR)

HORIZONTAL FORCE ( $E_h$ ) =  $2.43 W_p = 146$  LBS

VERTICAL FORCE ( $E_v$ ) =  $0.27 W_p = 16$  LBS

TENSION (T)

$$T = \frac{146\#(18")}{23.63"} + \frac{60\# + 16\#}{2 \text{ CABLES}} = 149 \text{ LBS/CABLE (MAX)}$$

$$T = \frac{146\#(18")}{23.63"} + \frac{60\#(0.6) + 16\#}{2 \text{ POSTS}} = 137 \text{ LBS/POST (MAX)}$$

NOTE:

PROVIDE CEILING STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN. (BY ENGINEER OF RECORD FOR THE BUILDING)