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

Office of Statewide Health Planning and Development

ANCHORAGE PRE-APPROVAL

OPA-1365-07

Equipment Manufacturer: Milestone AV Technologies

Equipment Type: Chief - CMA - 115 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 LOCATION IN THE STATE OF CALIFORNIA. THE ELEVATED FLOOR DETAILS MAY BE USED AT ANY HEIGHT IN A BUILDING.
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. PER CAN 2-1708A.5, THIS UNIT DOES NOT REQUIRE "SPECIAL SEISMIC CERTIFICATION".

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD

6. 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.
7. PROVIDE ANY 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 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.

REGISTERED PROFESSIONAL ENGINEER
JOSEPH LaBRIE
No. 3566
EXP. 3-31-2010
STRUCTURAL
10/12/09
STATE OF CALIFORNIA

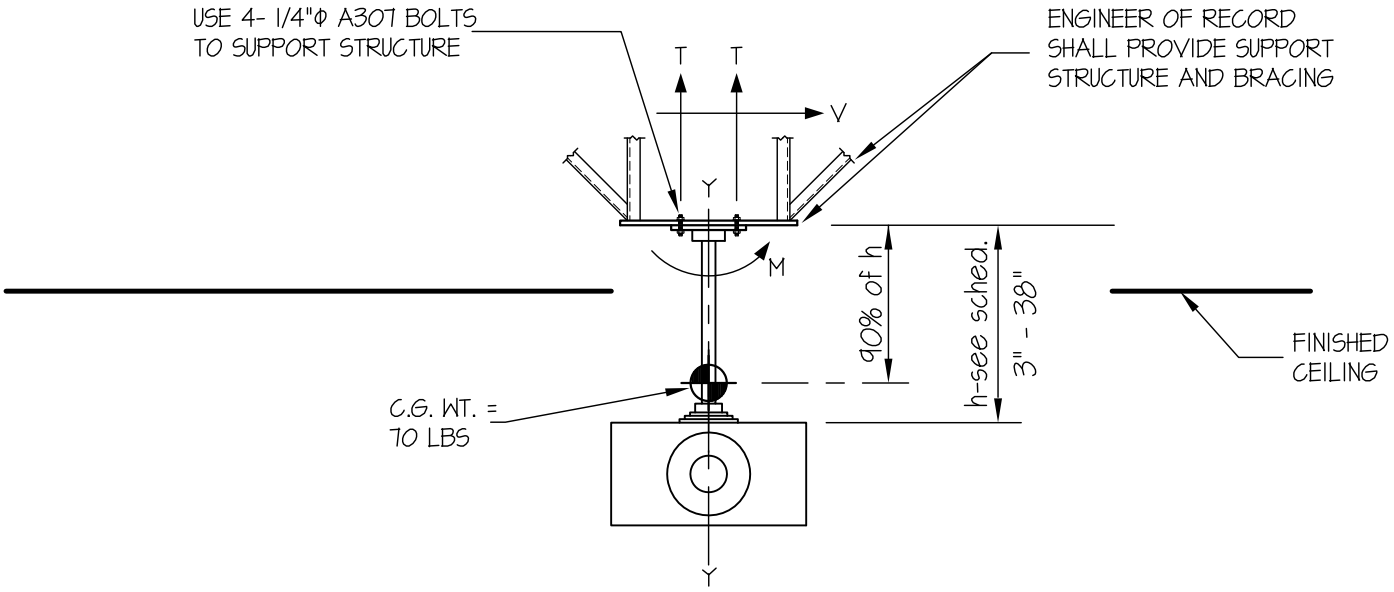
NOT STRUCTURE ENGINEERED ORDERED

APPROVED
Fixed Equipment Anchorage
Office of Statewide Health Planning and Development
OPA-1365-07
Pre-approval Program Manager:
Anthony R. Pike
(916) 440-8470
Reviewed By: Jerry Yee 10/12/09

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING www.equipmentanchorage.com		
MILESTONE AV TECHNOLOGIES	DES. R. LA BRIE	SHEET 2
	EASE JOB NO. 11-0781	
CHIEF - CMA - 115 PROJECTOR MOUNT	DATE 10/12/09	OF 3 SHEETS

SEISMIC ANCHORAGE

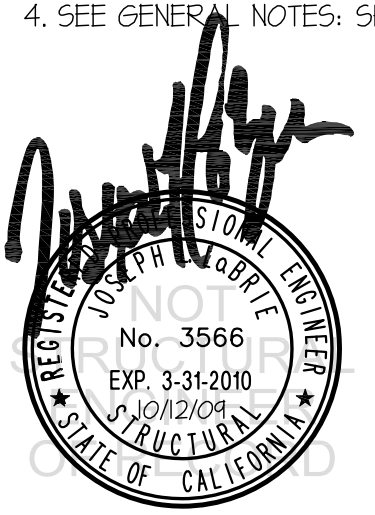
CEILING MOUNTED



ELEVATION

NOTES:

1. 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, I_p = 1.5, a_p = 2.5, R_p = 2.5)
   VERTICAL FORCE (E_v) = 0.27 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. ARCHITECT OR STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE SUPPORT STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN.
4. SEE GENERAL NOTES: SHEET 1



NOT STRUCTURE ENGINEERED

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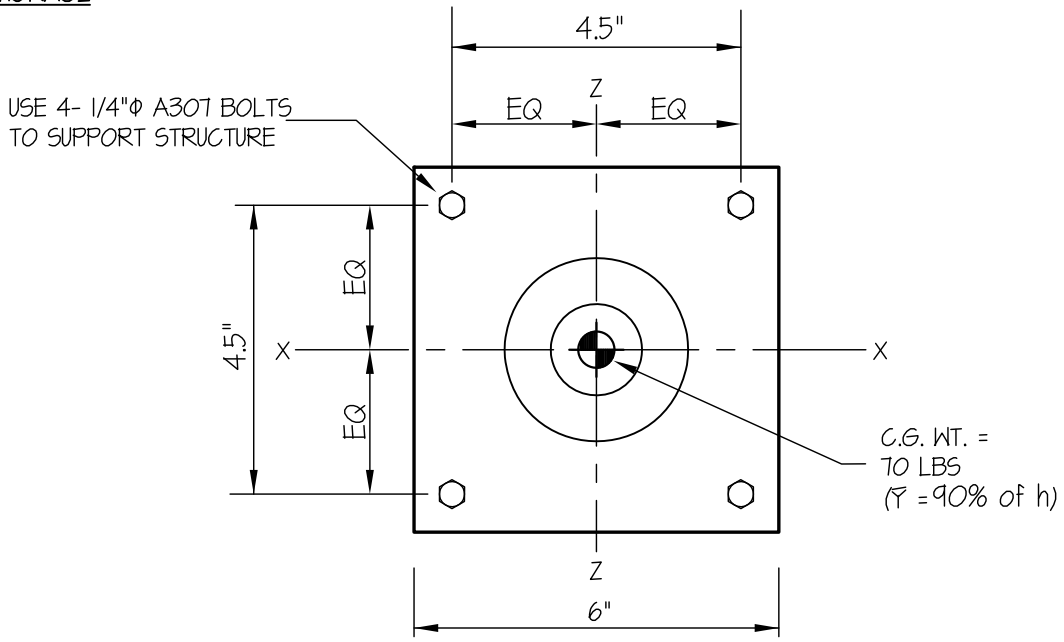
MILESTONE AV TECHNOLOGIES

CHIEF - CMA - 115 PROJECTOR MOUNT

DES. R. LA BRIE
EASE JOB NO. 11-0781
DATE 10/12/09
SHEET 3 OF 3 SHEETS

SEISMIC ANCHORAGE

CEILING MOUNTED



PLAN AT CEILING PLATE

Drop Tube (h)	Moment inch-lbs	Tension lbs/bolt	Shear lbs/bolt
12"	1836	320	43
24"	3672	618	43
36"	5508	915	43
38" (MAX)	5814	965	43

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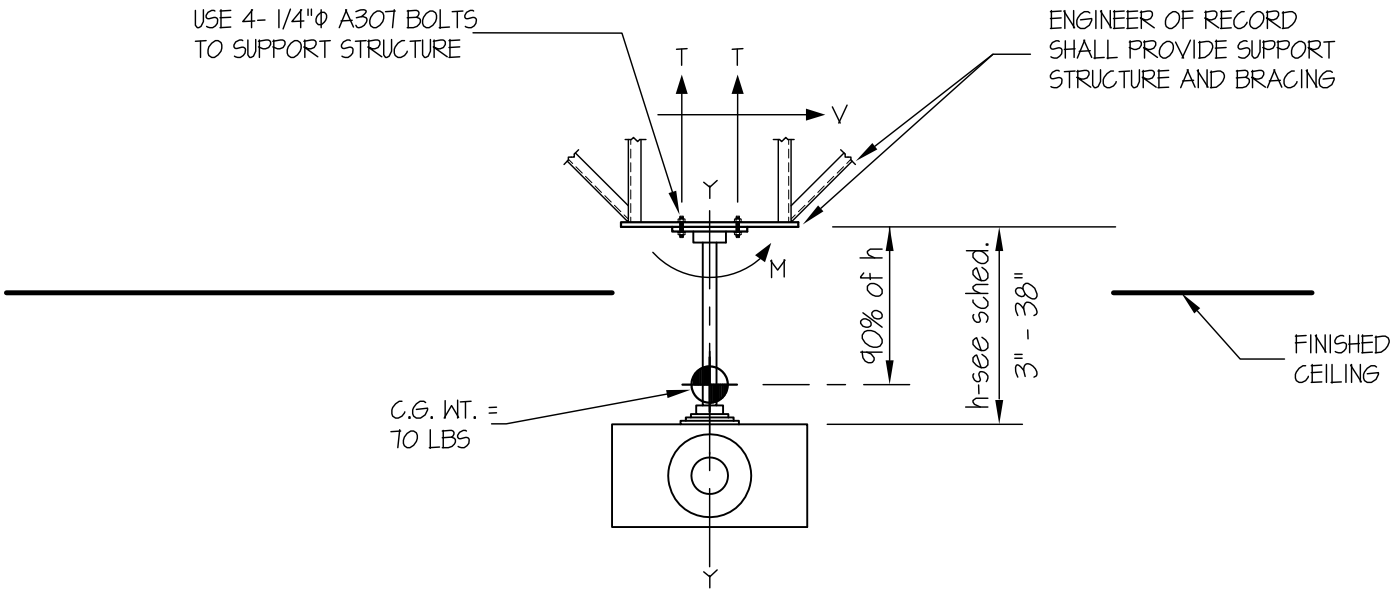
MILESTONE AV TECHNOLOGIES	DES. R. LA BRIE	SHEET 1
	EASE JOB NO. 11-0781	
CHIEF - CMA - 115 PROJECTOR MOUNT	DATE 10/12/09	OF 2 SHEETS

SEISMIC ANCHORAGE

CEILING MOUNTED



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.

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MILESTONE AV TECHNOLOGIES

CHIEF - CMA - 115 PROJECTOR MOUNT

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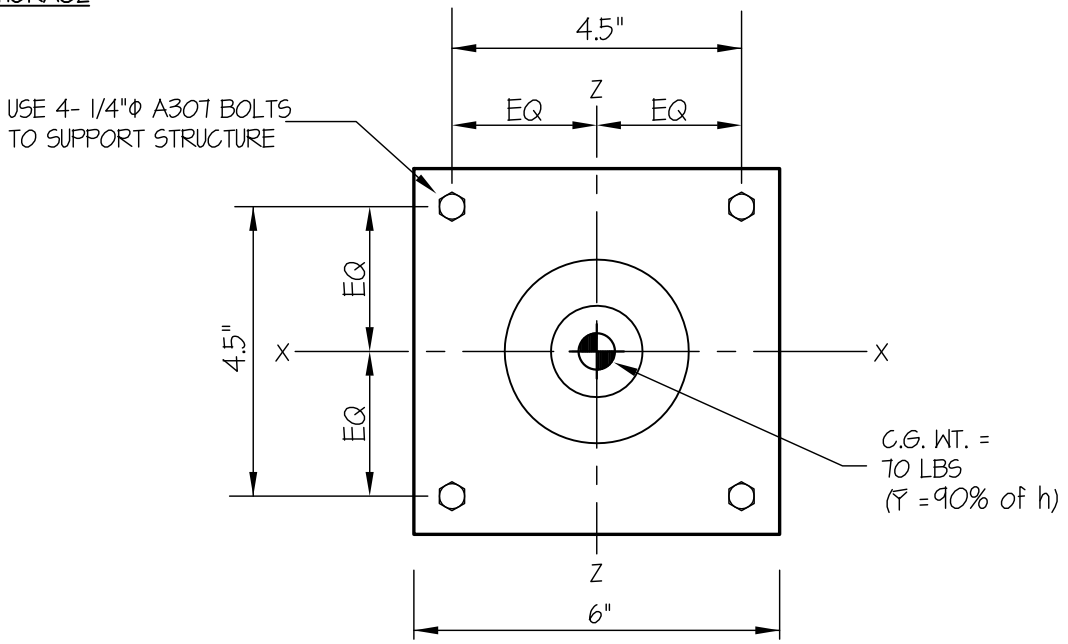
EASE JOB NO. 11-0781
DATE 10/12/09
SHEET 2 OF 2 SHEETS

SEISMIC ANCHORAGE

CEILING MOUNTED



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36"	5508	915	43
38" (MAX)	5814	965	43

LOADS:

WEIGHT = 70 LBS (INCLUDES PROJECTOR)
HORIZONTAL FORCE (E_h) = 170 LBS
VERTICAL FORCE (E_v) = 19 LBS

BOLT GROUP PROPERTIES:

I_{X-X} = 19 in.^{4}
I_{Z-Z} = 19 in.^{4}
I_{Y-Y} = 38 in.^{4}

MOMENTS:

M_{XX} = 170#(37") = 5814"#
M_{ZZ} = 170#(37") = 5814"#
M_{YY} = 170#(0") = 0"#

BOLT FORCES:

TENSION (T)

$$T = \frac{5814"\#(3.08")}{19} + \frac{70\# + 19\#}{4 \text{ BOLTS}} = 965 \text{ LBS/BOLT (MAX)}$$

SHEAR (V)

$$V = \frac{170\#}{4 \text{ BOLTS}} = 43 \text{ LBS/BOLT (MAX)}$$ (PER AISC J3.7, LESS THAN 20% STRESS)