



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD PREAPPROVAL
OF MANUFACTURER'S CERTIFICATION (OPM)

OFFICE USE ONLY
APPLICATION #: OPM-0233-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: [X] New [] Renewal [] Update to Pre-CBC 2013 OPA Number:

Manufacturer Information

Manufacturer: Smoke Guard

Manufacturer's Technical Representative: John Wack

Mailing Address: 1915 Mark Court, Suite 100, Concord, CA. 94520

Telephone: (925) 521-8119 Email: JohnW@sgcal.com

Product Information

Product Name: Smoke Curtain

Product Type: Other mechanical and electrical components

Product Model Number: M200, M400 & M600

General Description: Closes off openings to curtail smoke migration between spaces

Applicant Information

Applicant Company Name: EASE Co.

Contact Person: Jonathan Roberson, S.E.

Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA. 91709

Telephone: (909) 606-7622 Email: J.Roberson@EASECo.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: [Signature] Date: 5/12/15

Title: Principal Engineer Company Name: EASE Co.

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

Registered Design Professional Preparing Engineering Recommendations

Company Name: EASE Co.

Name: Jonathan Roberson, S.E. California License Number: S4197

Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA. 91709

Telephone: 909-606-7622 Email: J.Roberson@EASECo.com

OSHPD Special Seismic Certification Preapproval (OSP)

- Special Seismic Certification is preapproved under OSP-
(Separate application for OSP is required)
- Special Seismic Certification is not preapproved

Certification Method(s)

- Testing in accordance with: ICC-ES AC156 FM 1950-16
- Other* (Please Specify): _____

*Use of criteria other than those adopted by the California Building Standards Code, 2016 (CBSC 2016) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test criteria other than those adopted in the CBSC 2016 may be used when approved by OSHPD prior to testing.

- Analysis
- Experience Data
- Combination of Testing, Analysis, and/or Experience Data (Please Specify): _____

List of Attachments Supporting the Manufacturer's Certification

- Test Report Drawings Calculations Manufacturer's Catalog
- Other(s) (Please Specify): _____

OFFICE USE ONLY – OSHPD APPROVAL VALID FOR CBC 2016 & ALL PRE-2016 CODE BASED PROJECTS

Signature:  Date: 01-31-2017

Print Name: Jeffrey Kikumoto

Title: SSE

Condition of Approval (if applicable): _____

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





**EQUIPMENT ANCHORAGE
& SEISMIC ENGINEERING**

5877 Pine Ave, Ste. 210
Chino Hills, CA. 91709
Phn: (909) 606-7622

Office of Statewide Health Planning and Development
PREAPPROVAL OF MANUFACTURER'S CERTIFICATION
OPM-0233-13

THIS PREAPPROVAL CONFORMS TO THE 2016 CALIFORNIA BUILDING CODE

MANUFACTURER: **SMOKE GUARD SYSTEMS**
EQUIPMENT NAME: **M200/M400/M600 SMOKE CURTAIN SYSTEM**

Sheet: 1 of 10
Date: 1/11/17

GENERAL NOTES

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2016 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2016 CBC
2. THIS DOCUMENT MAY ONLY BE USED WITH THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER LISTED ABOVE FOR THE SPECIFIC PROJECT SITE AND INSTALLATION LOCATION. THIS DOCUMENT IS INVALID WITHOUT SUCH CONSENT.
3. THIS PREAPPROVAL CONFORMS TO THE 2016 CALIFORNIA BUILDING CODE WHERE S_{ds} IS NOT GREATER THAN 1.70, 2.20; SEE DETAILS FOR APPLICABILITY.
4. FORCES PER ASCE 7-10 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3,
WHERE $S_{ds} = 1.70$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $z/h \leq 1$ CONCRETE WALL. SEE FOLLOWING SHEETS FOR Ω_0 .
WHERE $S_{ds} = 2.20$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $z/h \leq 1$ CONCRETE WALL. SEE FOLLOWING SHEETS FOR Ω_0 .
5. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
6. ALL DESIGN FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.
7. SHEET METAL SCREWS SHALL BE TEKS SCREWS BY ITW BUILDEX (ICC ESR-1976).
8. CONCRETE WALL DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION. (i.e. $z/h \leq 1$)

9. RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING

- A. PROVIDE SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN ADDITION TO ALL OTHER LOADS.
- B. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2016 CBC AND WITH THE DETAILS, MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PREAPPROVAL DOCUMENTS.
- C. VERIFY THAT PROJECT SPECIFIC VALUES OF S_{ds} & z/h RESULT IN SEISMIC FORCES (E_h , E_v) THAT DO NOT EXCEED THE VALUES ON THE DETAILS.
- D. VERIFY THAT THE CONCRETE WALL TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR.
- E. VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY CONCRETE WALL EDGES OR OPENINGS (SEE TYPICAL DETAIL ON SHEET 2).
- F. VERIFY THAT ALL NEW OR EXISTING ANCHORS ARE AN ADEQUATE DISTANCE FROM THE UNIT ATTACHMENTS AND CHECK FOR INTERACTION WHERE OTHER ANCHORS ARE WITHIN 18" OR $6h_{ef}$ FROM THIS UNIT'S ANCHORS.
- G. DESIGN BACKING BARS, STUDS, ETC. WHICH THE UNITS ARE ATTACHED TO AS NOTED ON THE DRAWINGS.



SMOKE GUARD SYSTEMS

M200/M400/M600 SMOKE CURTAIN SYSTEM

DES. **J. ROBERSON**

JOB NO. **11-1352**

DATE **1/11/17**

SHEET

2

OF **10** SHEETS

9. EXPANSION ANCHORS:

A. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICC REPORT.

Anchor Diameter	Concrete Type	Min. f'c (psi)	Anchor Type	ICC Report No.	Min. Embed.	Min. Spacing	Min. Edge Dist.	Min. Conc. Thickness	Install Torque	Direct Tension
1/4"	Normal Weight	3000	Hilti Kwik Bolt Hus-EZ	ESR-3027	1.92"	6"	6"	4.25"	18 FT-LB	779 lb

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE WALL EDGES, 6" AWAY MINIMUM (i.e. - CORNER). SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

C. TESTING OF CONCRETE SCREW ANCHORS PER 2016 CBC, 1910A.5: TESTING SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO OSHPD

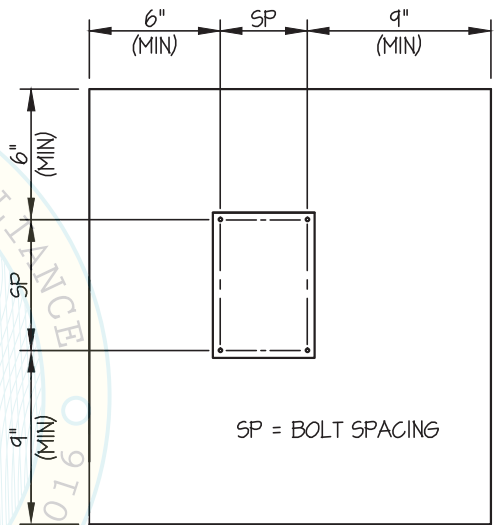
(i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST OR AT LEAST 50% OF THE ANCHORS.

(ii) ACCEPTANCE CRITERIA:

- DIRECT 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.

(iii) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.

D. AVOID DAMAGING EXISTING STEEL REINFORCING IN CONCRETE WALL WHEN INSTALLING CONCRETE SCREW ANCHORS



TYPICAL CONCRETE EDGE DETAIL

BY: Jeffrey Y. Kikumoto



SMOKE GUARD SYSTEMS

M200/M400/M600 SMOKE CURTAIN SYSTEM

DES. J. ROBERSON

JOB NO. 11-1352

DATE 1/11/17

SHEET

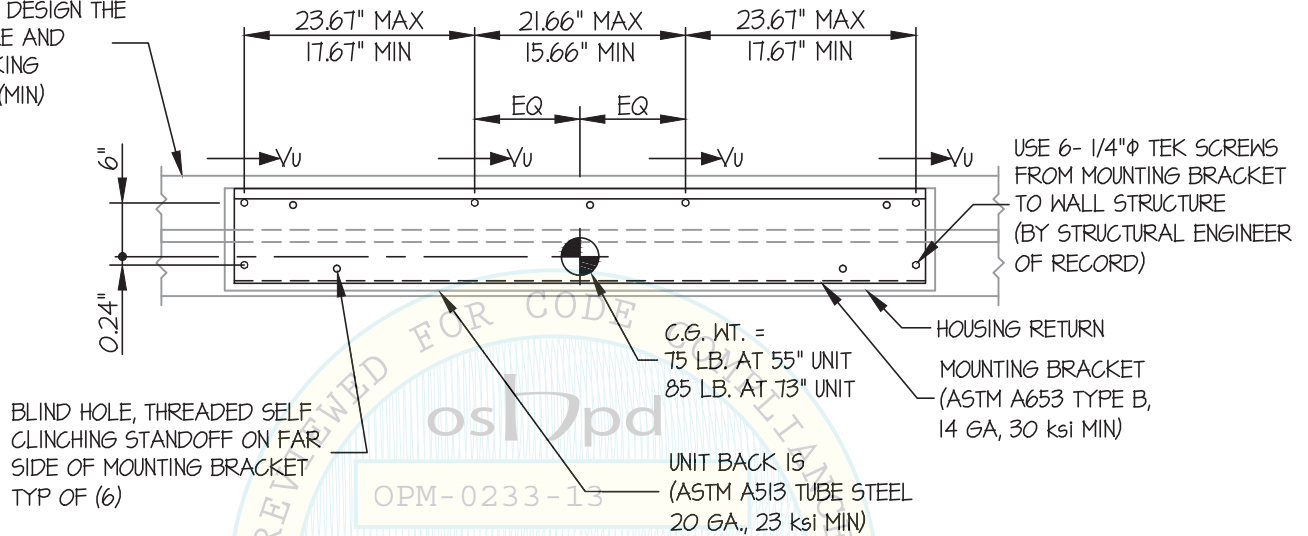
3

OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED

STRUCTURAL ENGINEER OF RECORD SHALL DESIGN THE WALL STRUCTURE AND THE WALL BACKING (16 GA., 50 ksi) (MIN)



OPM-0233-13

BY: Jeffrey Y. Kikumoto

FRONT ELEVATION

DATE: (M200/M400) 17

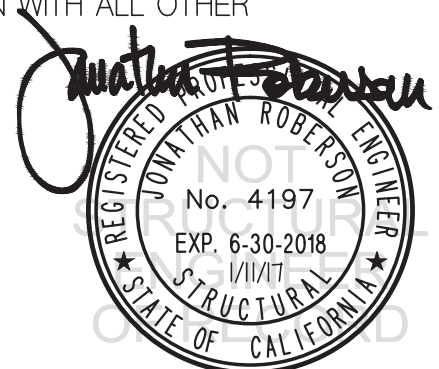
NOTES:

- FORCES ARE DETERMINED PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10. STRENGTH DESIGN IS USED. ($a_p = 1.0$, $l_p = 1.5$, $R_p = 1.5$, $\Omega_o = 1.5$, $z/h \leq 1$)

Sds	1.70	2.20
HORIZONTAL FORCE (Eh)	2.04 Wp	2.64 Wp
HORIZONTAL FORCE (Emh)	3.06 Wp	3.96 Wp
VERTICAL FORCE (Ev)	0.34 Wp	0.44 Wp

(Emh = Eh x Ω_o ; FOR CONCRETE ANCHORAGE)

- 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.
- SEE GENERAL NOTES: SHEET 1 AND 2.



SMOKE GUARD SYSTEMS

M200/M400/M600 SMOKE CURTAIN SYSTEM

DES. J. ROBERSON

JOB NO. 11-1352

DATE 1/11/17

SHEET

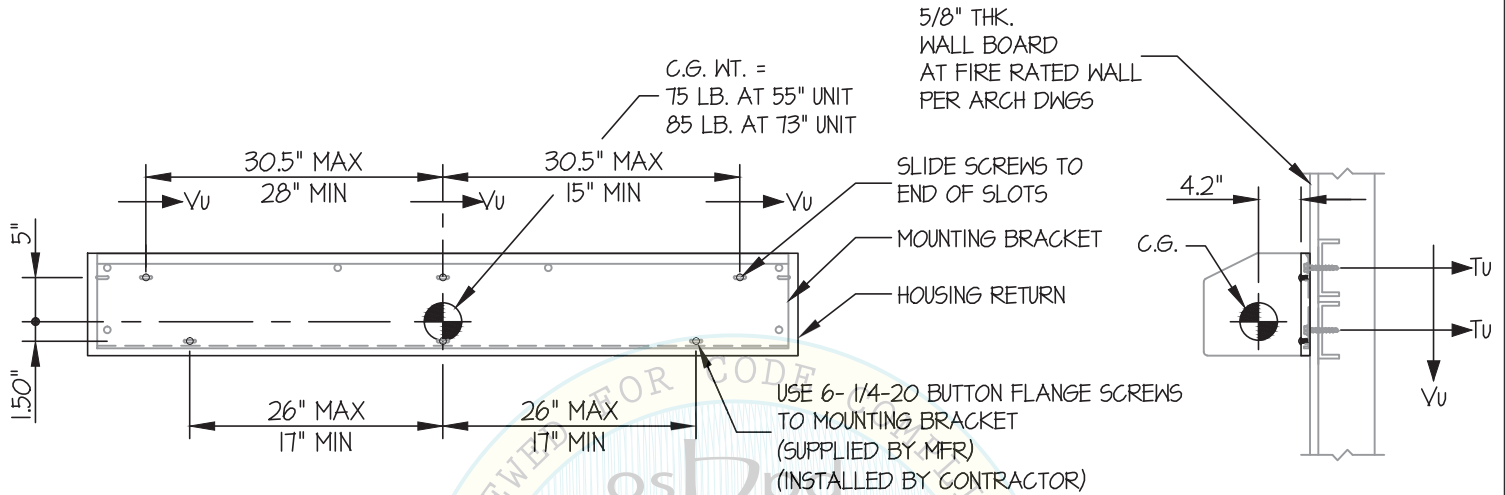
4

OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

MAX $S_{Ds} \leq 2.20$

WALL MOUNTED



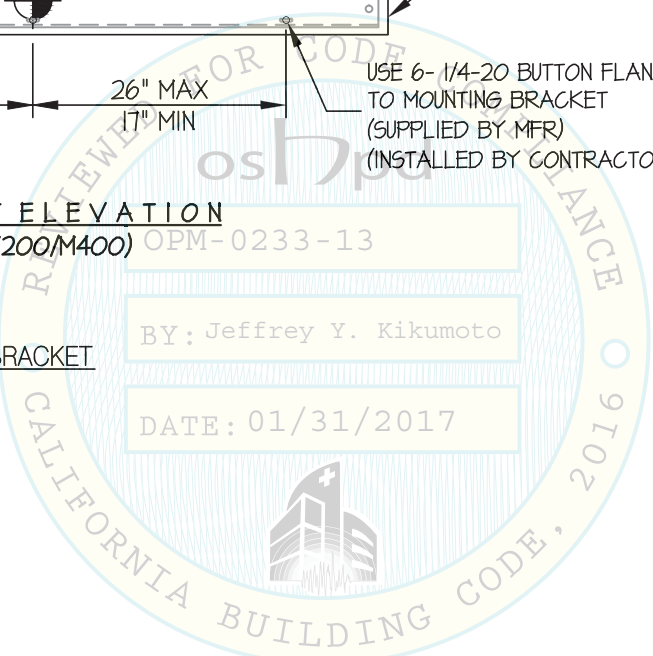
FRONT ELEVATION
(M200/M400)

COMPONENT TO MOUNTING BRACKET

$T_u = 100$ LB/SCREW (MAX)
 $V_u = 17$ LB/SCREW (MAX)
 (VALUES DO NOT INCLUDE Ω)

BY: Jeffrey Y. Kikumoto

DATE: 01/31/2017



SMOKE GUARD SYSTEMS

DES. J. ROBERSON

SHEET

5

M200/M400/M600 SMOKE CURTAIN SYSTEM

JOB NO. 11-1352

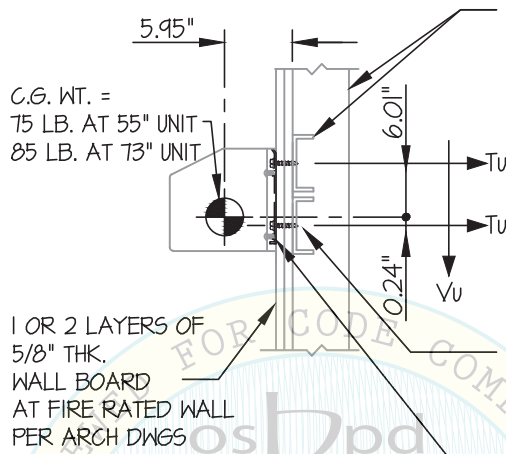
DATE 1/11/17

OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

MAX $S_{Ds} \leq 1.10$

WALL MOUNTED



C.G. WT. =
75 LB. AT 55" UNIT
85 LB. AT 73" UNIT

1 OR 2 LAYERS OF
5/8" THK.
WALL BOARD
AT FIRE RATED WALL
PER ARCH DWGS

STRUCTURAL ENGINEER OF
RECORD SHALL DESIGN THE
WALL STRUCTURE AND THE
WALL BACKING
(16 GA., 50 ksi) (MIN)

USE 6- 1/4"Φ TEK SCREWS
TO WALL STRUCTURE
(BY STRUCTURAL ENGINEER
OF RECORD

BRACKET IS
(ASTM A653 TYPE B
14 GA., 30 ksi MIN)

OPM-0233-13

SECTION AT STEEL STUD WALL

BY: Jeffrey Y. Kikumoto

(M200/M400)

DATE: 01/31/2017

MOUNTING BRACKET TO STRUCTURE

$T_u = 127$ LB/SCREW (MAX)

$V_u = 169$ LB/SCREW (MAX)

(VALUES DO NOT INCLUDE Ω)



SMOKE GUARD SYSTEMS

M200/M400/M600 SMOKE CURTAIN SYSTEM

DES. **J. ROBERSON**

JOB NO. **11-1352**

DATE **1/11/17**

SHEET

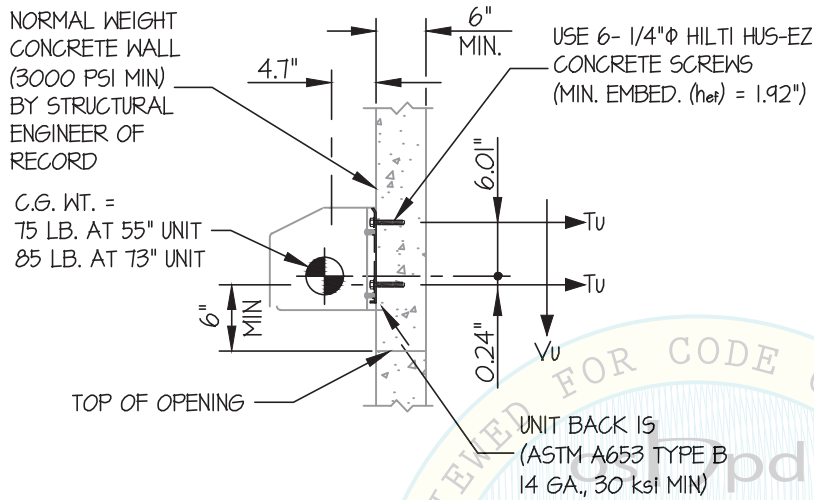
6

OF **10** SHEETS

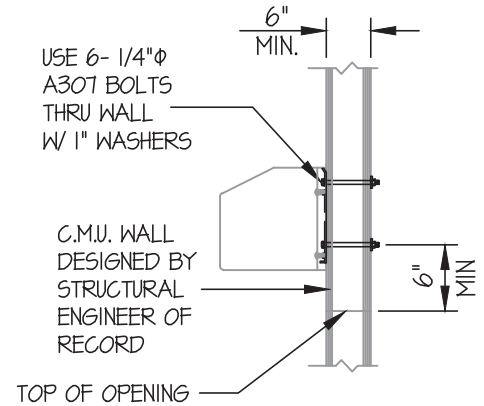
SEISMIC SUPPORTS & ATTACHMENTS

MAX $S_{Ds} \leq 2.20$

WALL MOUNTED



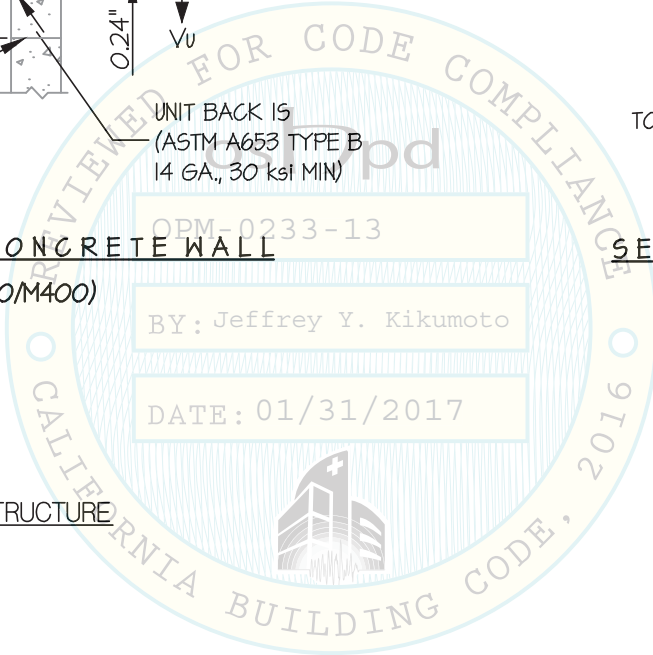
SECTION AT CONCRETE WALL
(M200/M400)



SECTION AT BLOCK WALL
(M200/M400)

MOUNTING BRACKET TO STRUCTURE

$T_u = 213$ LB/SCREW (MAX)
 $V_u = 325$ LB/SCREW (MAX)
(VALUES INCLUDE Ω)



OPM-0233-13
BY: Jeffrey Y. Kikumoto
DATE: 01/31/2017



SMOKE GUARD SYSTEMS

M200/M400/M600 SMOKE CURTAIN SYSTEM

DES. J. ROBERSON

JOB NO. 11-1352

DATE 1/11/17

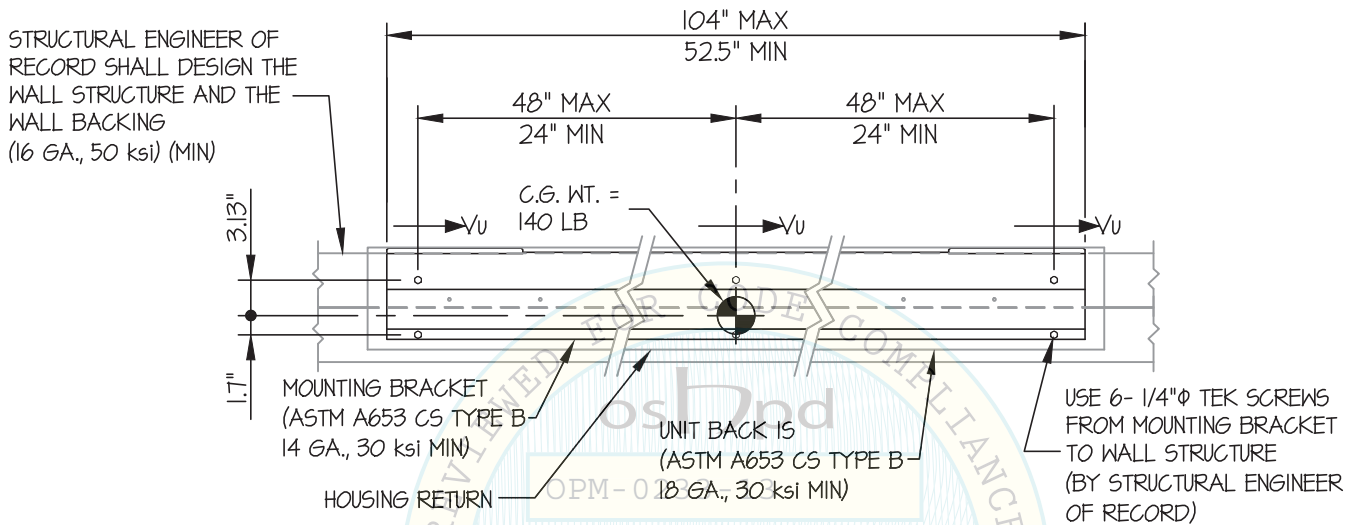
SHEET

7

OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



FRONT ELEVATION

BY: Jeffrey (M600) Kumoto

MODEL 600	
LENGTH (in)	MAX WEIGHT (lb)
55	80
65	90
73	98
85	110
109	140

NOTES:

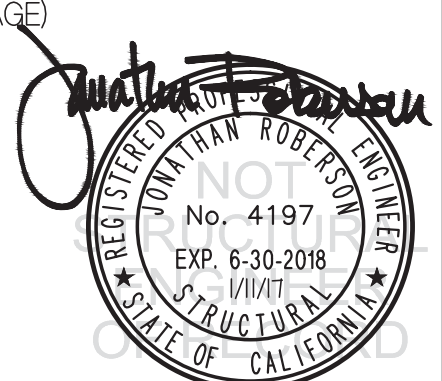
1. FORCES ARE DETERMINED PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10 STRENGTH DESIGN IS USED. ($S_{Ds} = 2.20$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $\Omega_o = 1.5$, $z/h \leq 1$)

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.



SMOKE GUARD SYSTEMS

M200/M400/M600 SMOKE CURTAIN SYSTEM

DES. J. ROBERSON

JOB NO. 11-1352

DATE 1/11/17

SHEET

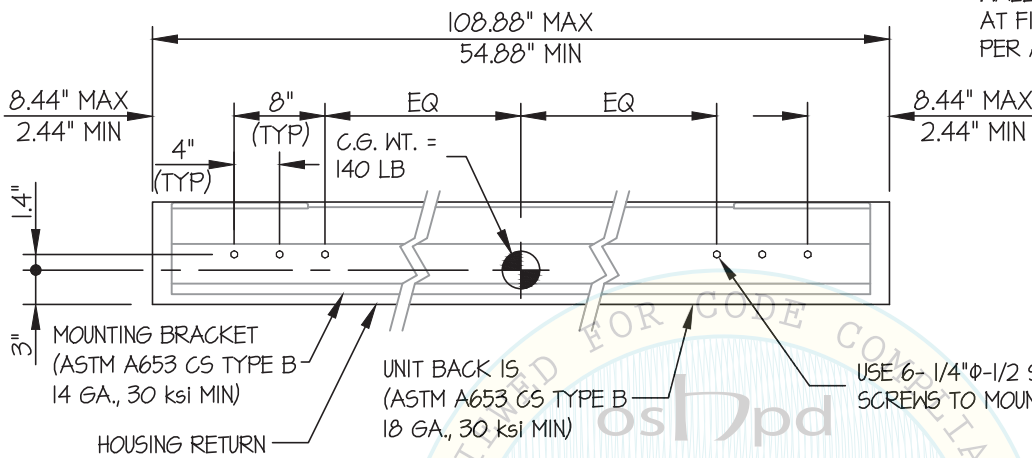
8

OF 10 SHEETS

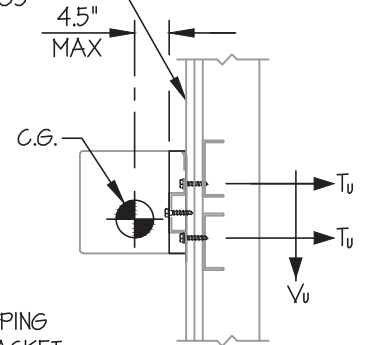
SEISMIC SUPPORTS & ATTACHMENTS

MAX $S_{Ds} \leq 2.20$

WALL MOUNTED



1 OR 2 LAYERS OF
5/8" THK.
WALL BOARD
AT FIRE RATED WALL
PER ARCH DWGS



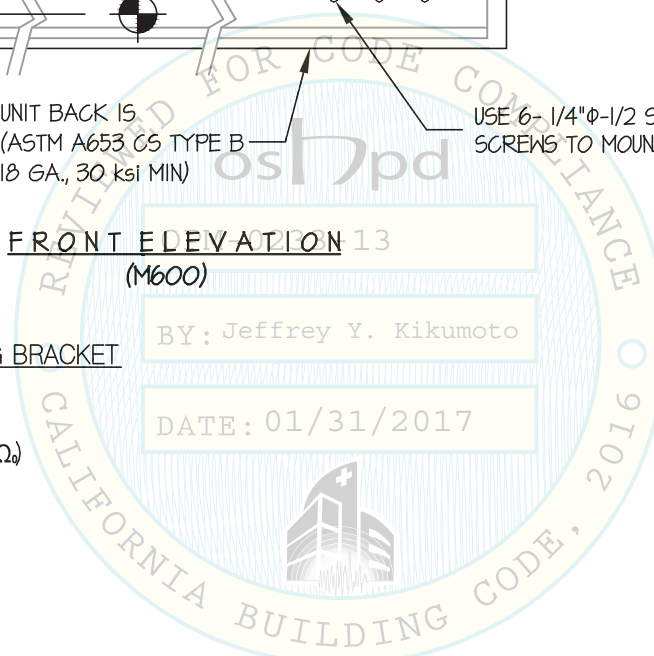
FRONT ELEVATION 13
(M600)

BY: Jeffrey Y. Kikumoto

DATE: 01/31/2017

COMPONENT TO MOUNTING BRACKET

$T_u = 140 \text{ LB/SCREW (MAX)}$
 $V_u = 84 \text{ LB/SCREW (MAX)}$
 (VALUES DO NOT INCLUDE Ω_d)



SMOKE GUARD SYSTEMS

M200/M400/M600 SMOKE CURTAIN SYSTEM

DES. J. ROBERSON

JOB NO. 11-1352

DATE 1/11/17

SHEET

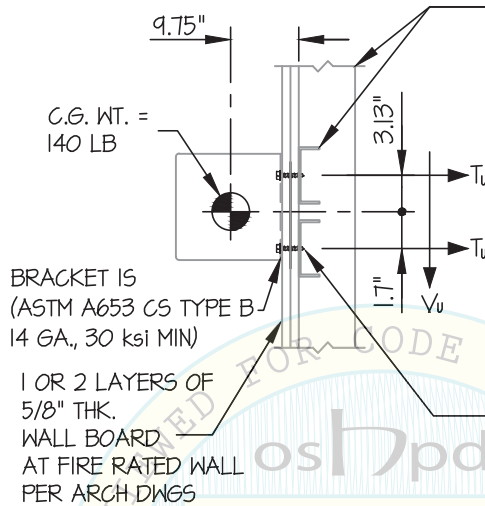
9

OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

MAX $S_{Ds} \leq 2.20$

WALL MOUNTED



STRUCTURAL ENGINEER OF RECORD SHALL DESIGN THE WALL STRUCTURE AND THE WALL BACKING (16 GA., 50 ksi) (MIN)

BRACKET IS (ASTM A653 C5 TYPE B) 14 GA., 30 ksi MIN)

1 OR 2 LAYERS OF 5/8" THK. WALL BOARD AT FIRE RATED WALL PER ARCH DWGS

USE 6-1/4" ϕ TEK SCREWS TO WALL STRUCTURE (BY STRUCTURAL ENGINEER OR RECORD)

SECTION AT STEEL STUD WALL (M600)

BY: Jeffrey Y. Kikumoto

DATE: 01/31/2017

MOUNTING BRACKET TO STRUCTURE

TOP SCREWS

$T_u = 214$ LB/SCREW (MAX)

$V_u = 95$ LB/SCREW (MAX)

BOTTOM SCREWS

$T_u = 122$ LB/SCREW (MAX)

$V_u = 165$ LB/SCREW (MAX)

(VALUES DO NOT INCLUDE Ω)



SMOKE GUARD SYSTEMS

M200/M400/M600 SMOKE CURTAIN SYSTEM

DES. J. ROBERSON

JOB NO. 11-1352

DATE 1/11/17

SHEET

10

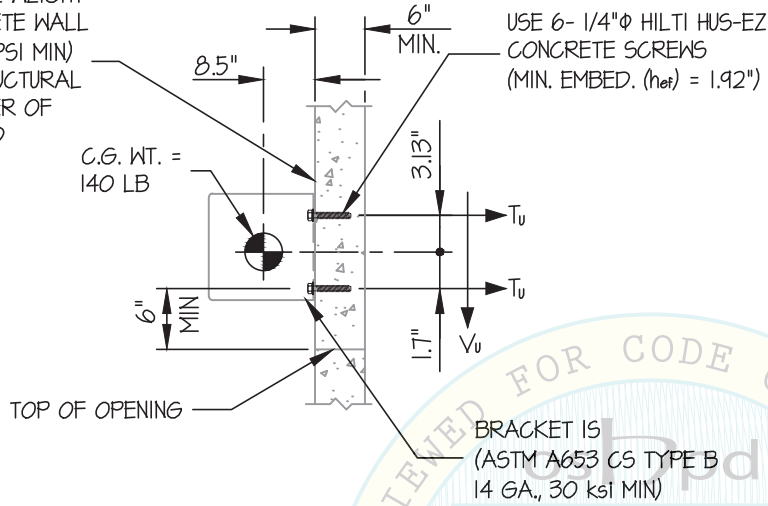
OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

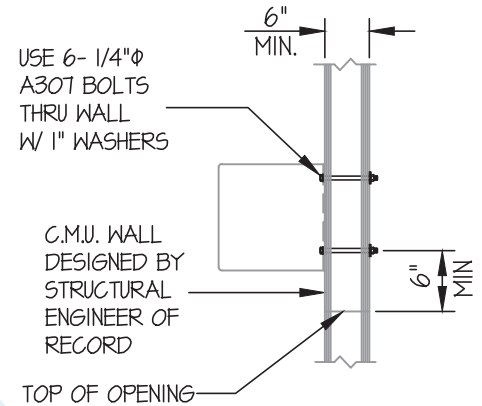
MAX $S_{Ds} \leq 2.20$

WALL MOUNTED

NORMAL WEIGHT
CONCRETE WALL
(3000 PSI MIN)
BY STRUCTURAL
ENGINEER OF
RECORD



SECTION AT CONCRETE WALL
(M600)



SECTION AT BLOCK WALL
(M600)

OPM-0233-13

BY: Jeffrey Y. Kikumoto

DATE: 01/31/2017

MOUNTING BRACKET TO STRUCTURE

$T_u = 318$ LB/SCREW (MAX)

$V_u = 243$ LB/SCREW (MAX)

(VALUES INCLUDE Ω)

