



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

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

OFFICE USE ONLY

APPLICATION #: OPM-0446

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: New Renewal/Update

Manufacturer Information

Manufacturer: TORVAN MEDICAL, INC.

Manufacturer's Technical Representative: _____

Mailing Address: 417 Homer Ave, Etobicoke, ON M8W 4W3

Telephone: (800) 551-0260

Email: halavi@torvanmedical.com

Product Information

Product Name: HEPA, AMBIENT, SCOPE & DRYING CABINETS

Product Type: Other electrical and mechanical components

Product Model Number: HEPA Cabinet (24"-44" Wide, Side and Top Loading), Ambient Cabinet (24"-44" wide), Scope Cabinet (27"-36" wide), Drying Cabinet (24"-44" wide, Side and Top Loading)

General Description: Storage/Processing for Endoscope Equipment

Applicant Information

Applicant Company Name: EASE LLC.

Contact Person: Tiffany Tonn

Mailing Address: 1515 FAIRVIEW AVE, STE 205, MISSOULA, MT 59801

Telephone: (406) 541-3273

Email: tiffany@easeco.com

Title: _____

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

STATE OF CALIFORNIA—HEALTH AND HUMAN SERVICES AGENCY





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

Registered Design Professional Preparing Engineering Recommendations

Company Name: EASE
Name: Jonathan Roberson California License Number: S4197
Mailing Address: 5877 Pine Ave., Suite 210, , Chino Hills, CA 91709
Telephone: () - Email: jon@EASECo.com

OSHDP Special Seismic Certification Preapproval (OSP)

Special Seismic Certification is preapproved under OSP OSP Number: _____

Certification Method

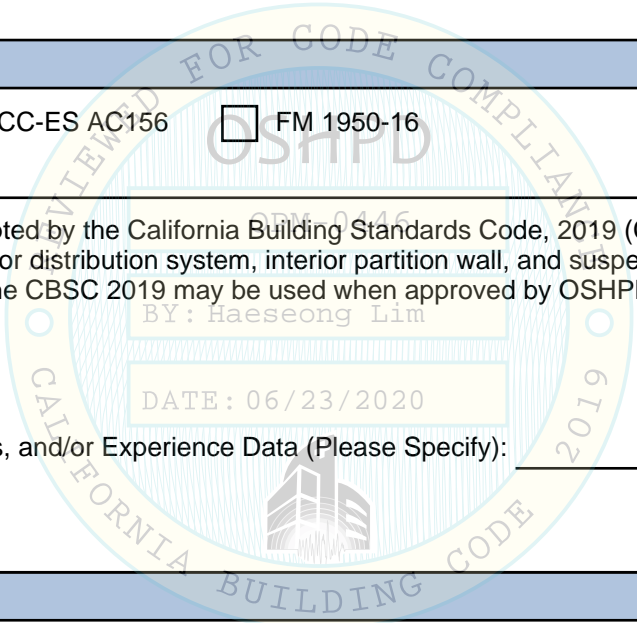
Testing in accordance with: ICC-ES AC156 FM 1950-16
 Other(s) (Please Specify): _____

*Use of criteria other than those adopted by the California Building Standards Code, 2019 (CBSC 2019) 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 2019 may be used when approved by OSHDP prior to testing.

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

OSHDP Approval

Date: 6/23/2020
Name: Haeseong Lim Title: Senior Structural Engineer
Condition of Approval (if applicable): _____





**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-0446

THIS PREAPPROVAL CONFORMS TO THE 2019 CALIFORNIA BUILDING CODE

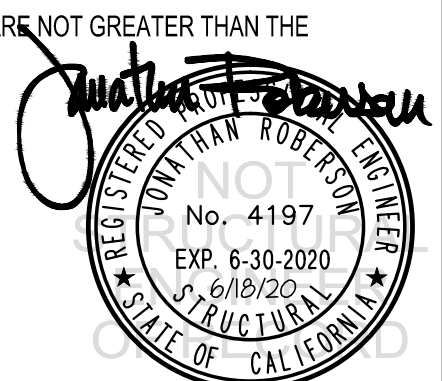
MANUFACTURER: **TORVAN MEDICAL**
EQUIPMENT NAME: **HEPA, AMBIENT, SCOPE & DRYING CABINETS**

Sheet: 1 of 15
Date: 6/18/20

GENERAL NOTES

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2019 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2019 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 2019 CALIFORNIA BUILDING CODE.
4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE $S_{Ds} \leq 2.20$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $z/h \leq 1$.
5. THE DETAILS IN THIS PREAPPROVAL MAY BE USED AT ANY LOCATION IN THE STATE OF CALIFORNIA, WHERE S_{Ds} IS NOT GREATER THAN 2.20.
6. ALL DESIGN FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.
7. SHEET METAL SCREWS SHALL BE HILTI S-MB SCREWS BY HILTI (ICC-ESR-2196).
8. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
9. PROVIDE PLACARD AT EACH CABINET IDENTIFYING MAXIMUM CONTENT WEIGHT ALLOWED. PLACARD MOUNTING LOCATION SHALL BE VISIBLE ON UNIT.
10. RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING
 - A. PROVIDE SUPPORTING STRUCTURE REQUIRED TO SUPPORT WEIGHTS AND FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS.
 - B. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2019 CBC AND WITH THE DETAILS SHOWN IN THIS PREAPPROVAL. 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 PREAPPROVAL DOCUMENTS.
 - C. 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.
 - D. DESIGN BACKING BARS, STUDS, ETC. WHICH THE UNITS ARE ATTACHED TO AS NOTED ON THE DRAWINGS.

BY: Haeseong Lim



TORVAN MEDICAL

DES. **J. ROBERSON**

SHEET

2

JOB NO. **11-1720**

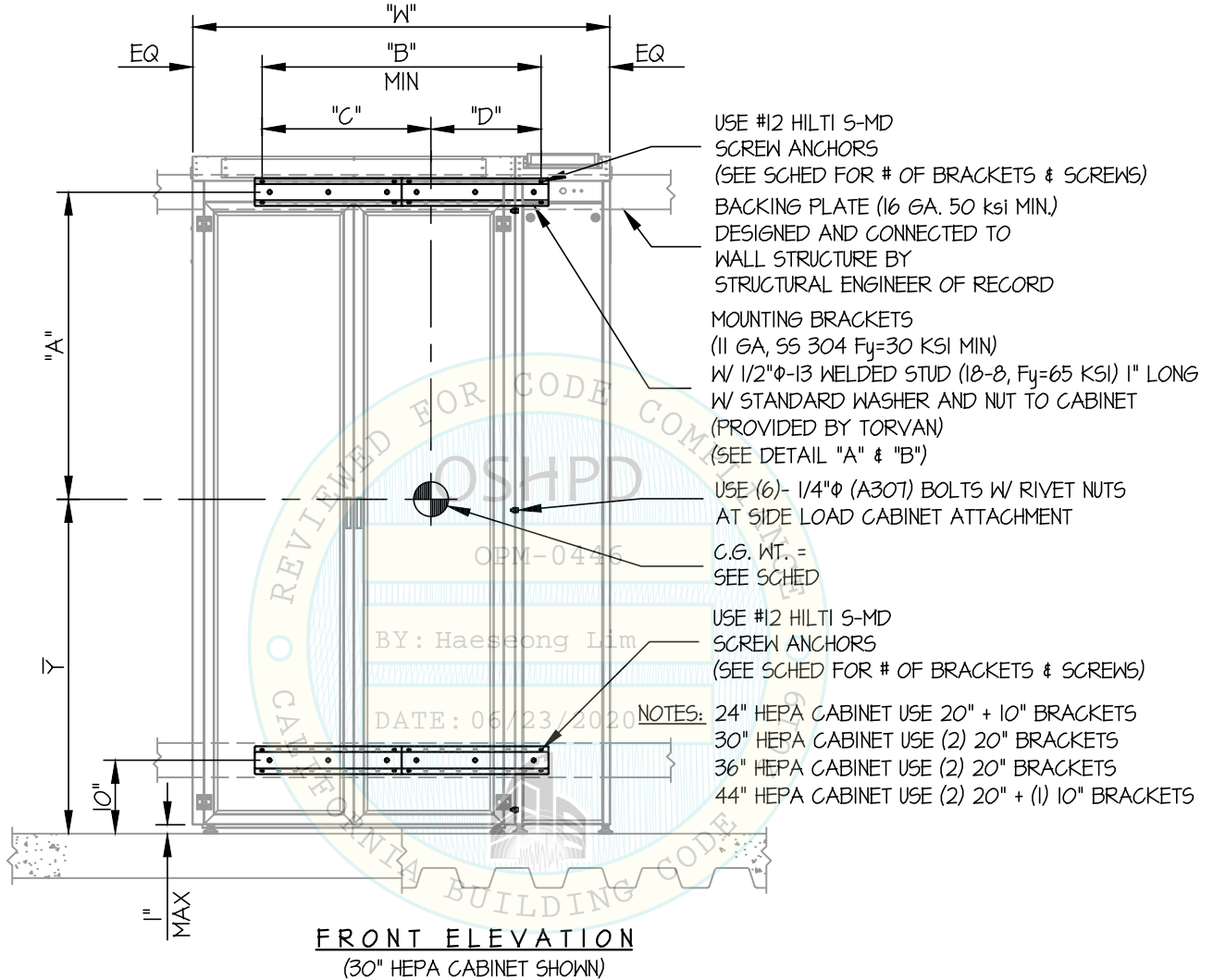
DATE **6/18/20**

OF **15** SHEETS

24"- 44" HEPA CABINET (SIDE LOAD)

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



NOTES:

1. FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16.

STRENGTH DESIGN IS USED. (S_{ds} = 2.20, α_p = 1.0, I_p = 1.5, R_p = 1.5, z/h ≤ 1)

HORIZONTAL FORCE (E_h) = 2.64 W_p

VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. 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.



TORVAN MEDICAL

DES. **J. ROBERSON**

SHEET

3

JOB NO. **11-1720**

DATE **6/18/20**

OF **15** SHEETS

24"- 44" HEPA CABINET (SIDE LOAD)

SEISMIC SUPPORTS & ATTACHMENTS

5/8" THK.
WALL BOARD

BACKING PLATE (16 GA. 50 ksi MIN.)
DESIGNED AND CONNECTED TO
WALL STRUCTURE BY
STRUCTURAL ENGINEER OF RECORD

WALL MOUNTED

USE #12 HILTI S-MD
SCREW ANCHORS
(SEE SCHED FOR # OF BRACKETS & SCREWS)

MOUNTING BRACKETS
(11 GA, SS 304 F_y=30 KSI MIN)
W 1/2"Φ-13 WELDED STUD (18-8, F_y=65 KSI) 1" LONG
W STANDARD WASHER AND NUT TO CABINET
(PROVIDED BY TORVAN)
(SEE DETAIL "A" & "B")

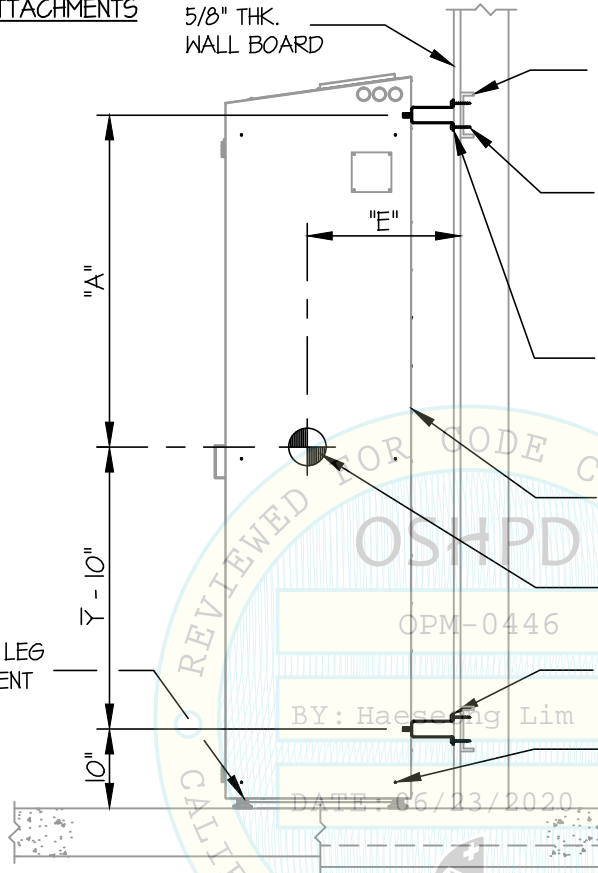
CABINET BACK MATERIAL
(20 GA, ASTM A240, TYPE 304, F_y=30 KSI)

C.G. WT. =
SEE SCHED

USE #12 HILTI S-MD
SCREW ANCHORS
(SEE SCHED FOR # OF BRACKETS & SCREWS)

USE (6)- 1/4"Φ (A307) BOLTS W RIVET NUTS
AT SIDE LOAD CABINET ATTACHMENT

5/16"Φ (A307) LEVELING LEG
FULL THREAD ENGAGEMENT
TO UNIT REQ'D (TYP)



SIDE ELEVATION

UNIT	LOADED WEIGHT (lb.)	UNIT SELF WEIGHT (lb.)	"W" (in.)	"A" (in.)	"B" (in.)	"C" (in.)	"D" (in.)	"E" (in.)	Y-bar (in.)	# OF SCREWS PER BRACKET ⁺	# OF BRACKETS	T _u (lb.) PER SCREW	V _u (lb.) PER SCREW
24" HEPA	354	343	36.50	39.2	28	16.6	11.4	18.4	43.8	4	4	187	63
30" HEPA	405	394	42.95	37.9	38	21.7	16.3	18.7	45.1	4	4	160	69
36" HEPA	432	421	48.95	37.5	38	22.4	15.6	18.9	45.5	4	4	172	73
44" HEPA	465	454	56.92	37.4	48	28.0	20.0	18.9	45.6	4	6	151	79

+ TOP BRACKETS + BOTTOM BRACKETS = # OF BRACKETS



TORVAN MEDICAL

DES. J. ROBERSON

SHEET

4

JOB NO. 11-1720

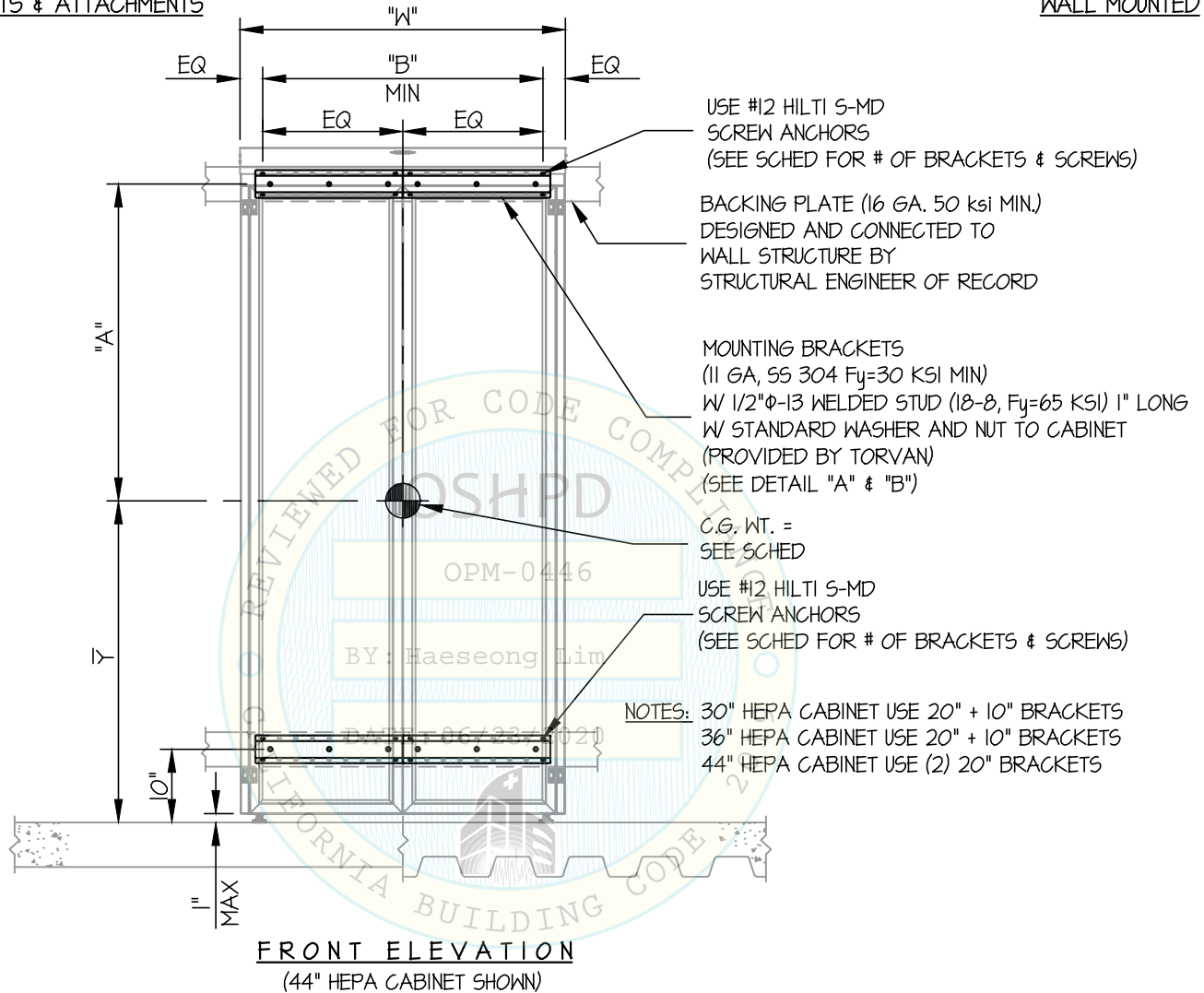
DATE 6/18/20

OF 15 SHEETS

30"- 44" HEPA CABINET (TOP LOAD)

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



NOTES:

- FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16.

STRENGTH DESIGN IS USED. ($S_{ds} = 2.20$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $z/h \leq 1$)

HORIZONTAL FORCE (E_h) = $2.64 W_p$

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.



TORVAN MEDICAL

DES. J. ROBERSON

SHEET

5

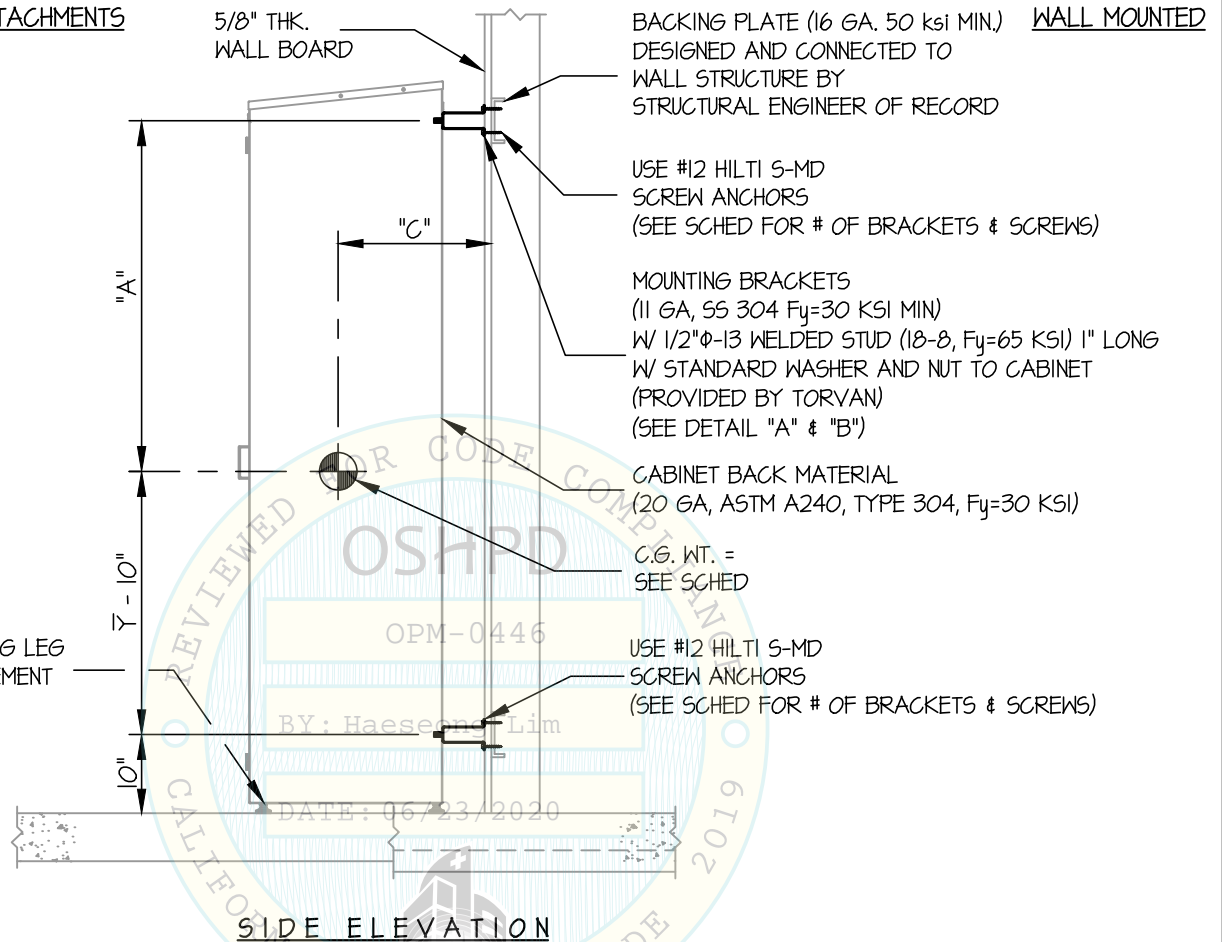
JOB NO. 11-1720

DATE 6/18/20

OF 15 SHEETS

30"- 44" HEPA CABINET (TOP LOAD)

SEISMIC SUPPORTS & ATTACHMENTS



UNIT	LOADED WEIGHT (lb.)	UNIT SELF WEIGHT (lb.)	"W" (in.)	"A" (in.)	"B" (in.)	"C" (in.)	Y (in.)	# OF SCREWS PER BRACKET	+ # OF BRACKETS	Tu (lb.) PER SCREW	Vu (lb.) PER SCREW
30" HEPA	372	360	30.97	34.5	28	19.2	43.2	4	4	190	63
36" HEPA	414	403	36.97	34.5	28	19.1	43.2	4	4	211	70
44" HEPA	473	462	44.97	34.0	38	19.1	43.7	4	4	182	79

+ TOP BRACKETS + BOTTOM BRACKETS = # OF BRACKETS



TORVAN MEDICAL

24"- 44" AMBIENT CABINET

DES. J. ROBERSON

JOB NO. 11-1720

DATE 6/18/20

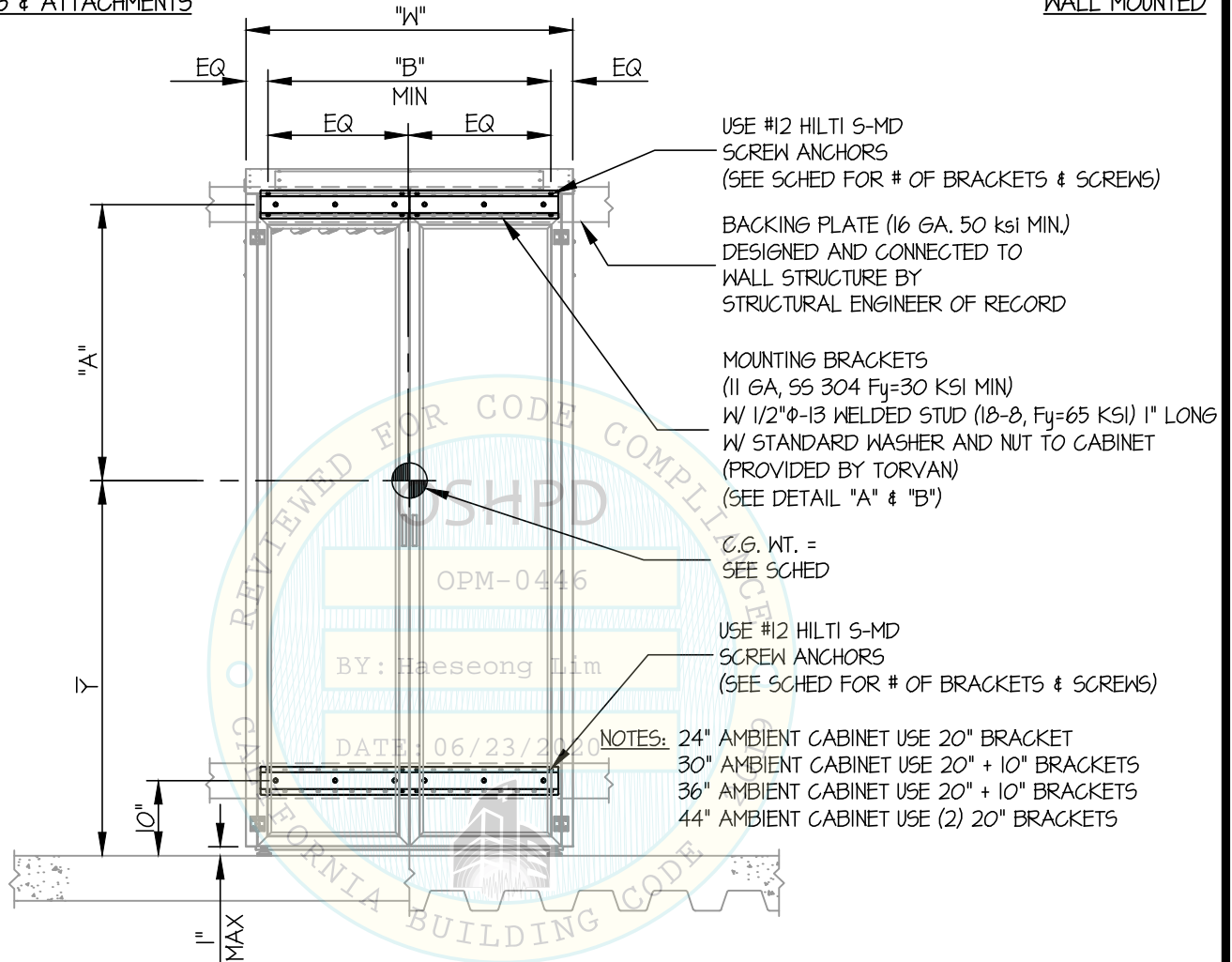
SHEET

6

OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



FRONT ELEVATION
(44" AMBIENT CABINET SHOWN)

NOTES:

1. FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16 STRENGTH DESIGN IS USED. (S_{ds} = 2.20, a_p = 1.0, l_p = 1.5, R_p = 1.5, z/h ≤ 1)

HORIZONTAL FORCE (E_h) = 2.64 W_p

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.



TORVAN MEDICAL

24"- 44" AMBIENT CABINET

DES. J. ROBERSON

JOB NO. 11-1720

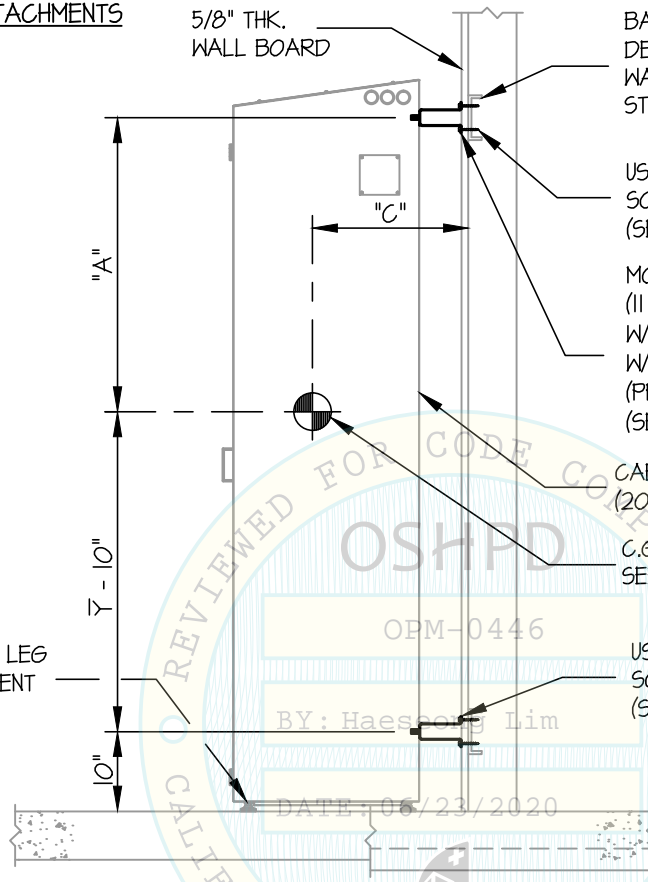
DATE 6/18/20

SHEET

7

OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS



BACKING PLATE (16 GA. 50 ksi MIN.) WALL MOUNTED
 DESIGNED AND CONNECTED TO
 WALL STRUCTURE BY
 STRUCTURAL ENGINEER OF RECORD

USE #12 HILTI S-MD
 SCREW ANCHORS
 (SEE SCHED FOR # OF BRACKETS & SCREWS)

MOUNTING BRACKETS
 (11 GA, SS 304 Fy=30 KSI MIN)
 W/ 1/2"φ-13 WELDED STUD (18-8, Fy=65 KSI) 1" LONG
 W/ STANDARD WASHER AND NUT TO CABINET
 (PROVIDED BY TORVAN)
 (SEE DETAIL "A" & "B")

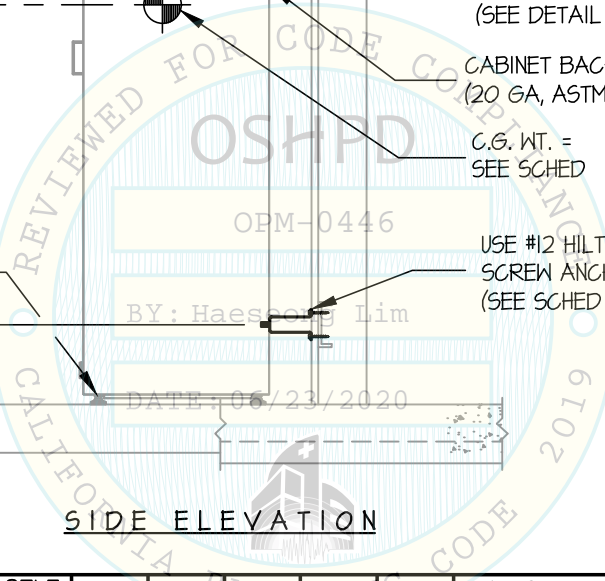
CABINET BACK MATERIAL
 (20 GA, ASTM A240, TYPE 304, Fy=30 KSI)

C.G. WT. =
 SEE SCHED

USE #12 HILTI S-MD
 SCREW ANCHORS
 (SEE SCHED FOR # OF BRACKETS & SCREWS)

5/16"φ (A307) LEVELING LEG
 FULL THREAD ENGAGEMENT
 TO UNIT REQ'D (TYP)

SIDE ELEVATION



UNIT	LOADED WEIGHT (lb.)	UNIT SELF WEIGHT (lb.)	"W" (in.)	"A" (in.)	"B" (in.)	"C" (in.)	ȳ (in.)	# OF SCREWS PER BRACKET	+ # OF BRACKETS	Tu (lb.) PER SCREW	Vu (lb.) PER SCREW
24" AMBIENT	201	176	23.55	34.0	18	19.3	49.0	4	2	173	71
30" AMBIENT	256	231	30.00	32.5	28	19.9	50.5	4	4	147	47
36" AMBIENT	284	259	36.00	32.4	28	19.9	50.6	4	4	164	52
44" AMBIENT	286	261	43.97	32.6	38	19.9	50.4	4	4	126	53

+ TOP BRACKETS + BOTTOM BRACKETS = # OF BRACKETS



TORVAN MEDICAL

24"- 44" DRYING CABINET (SIDE LOAD)

DES. J. ROBERSON

JOB NO. 11-1720

DATE 6/18/20

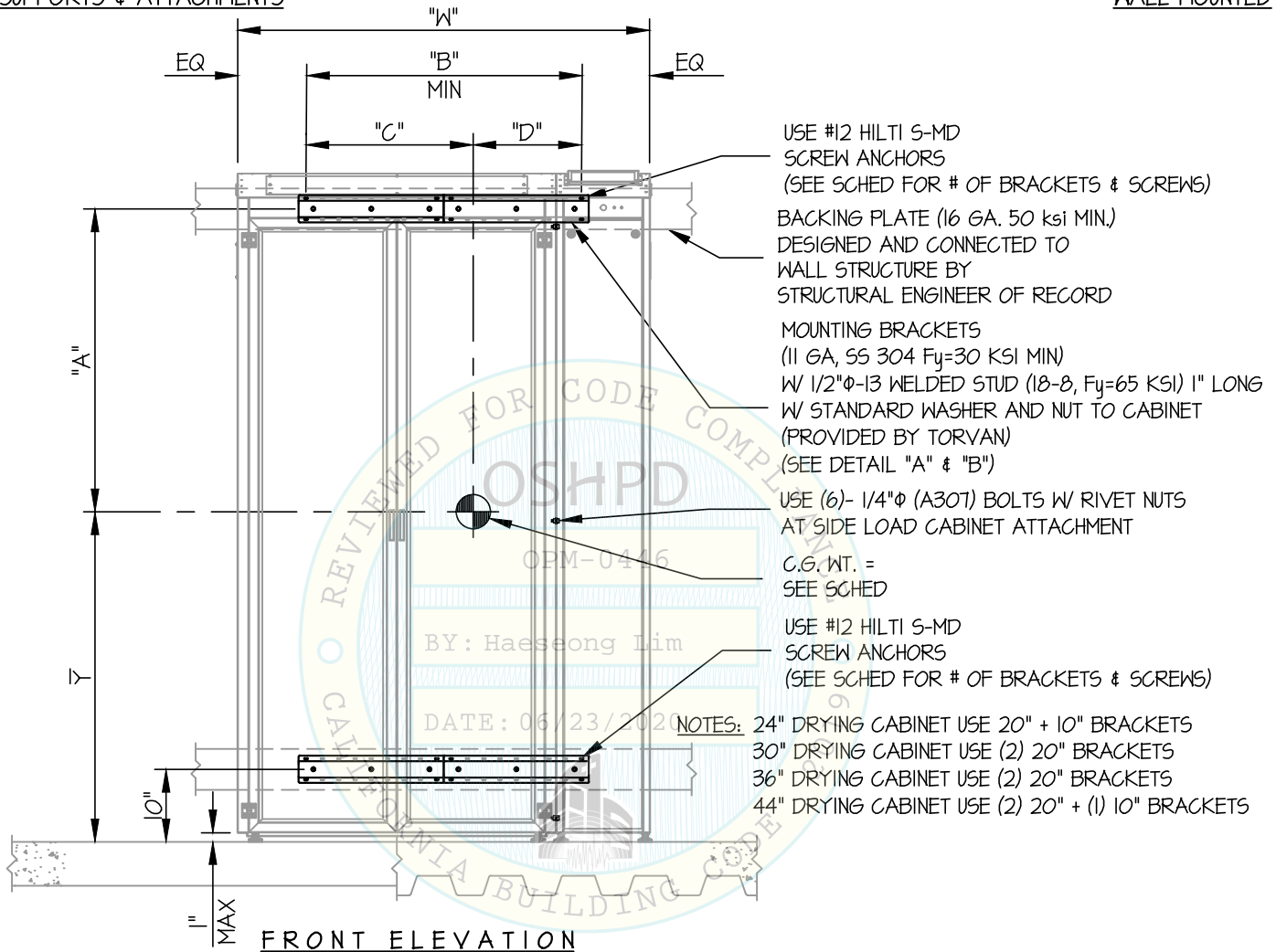
SHEET

8

OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



NOTES:

1. FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16

STRENGTH DESIGN IS USED. ($Sds = 2.20$, $\alpha_p = 1.0$, $l_p = 1.5$, $R_p = 1.5$, $z/h \leq 1$)

HORIZONTAL FORCE (E_h) = $2.64 W_p$

VERTICAL FORCE (E_v) = $0.44 W_p$

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. 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.



TORVAN MEDICAL

DES. **J. ROBERSON**

SHEET

9

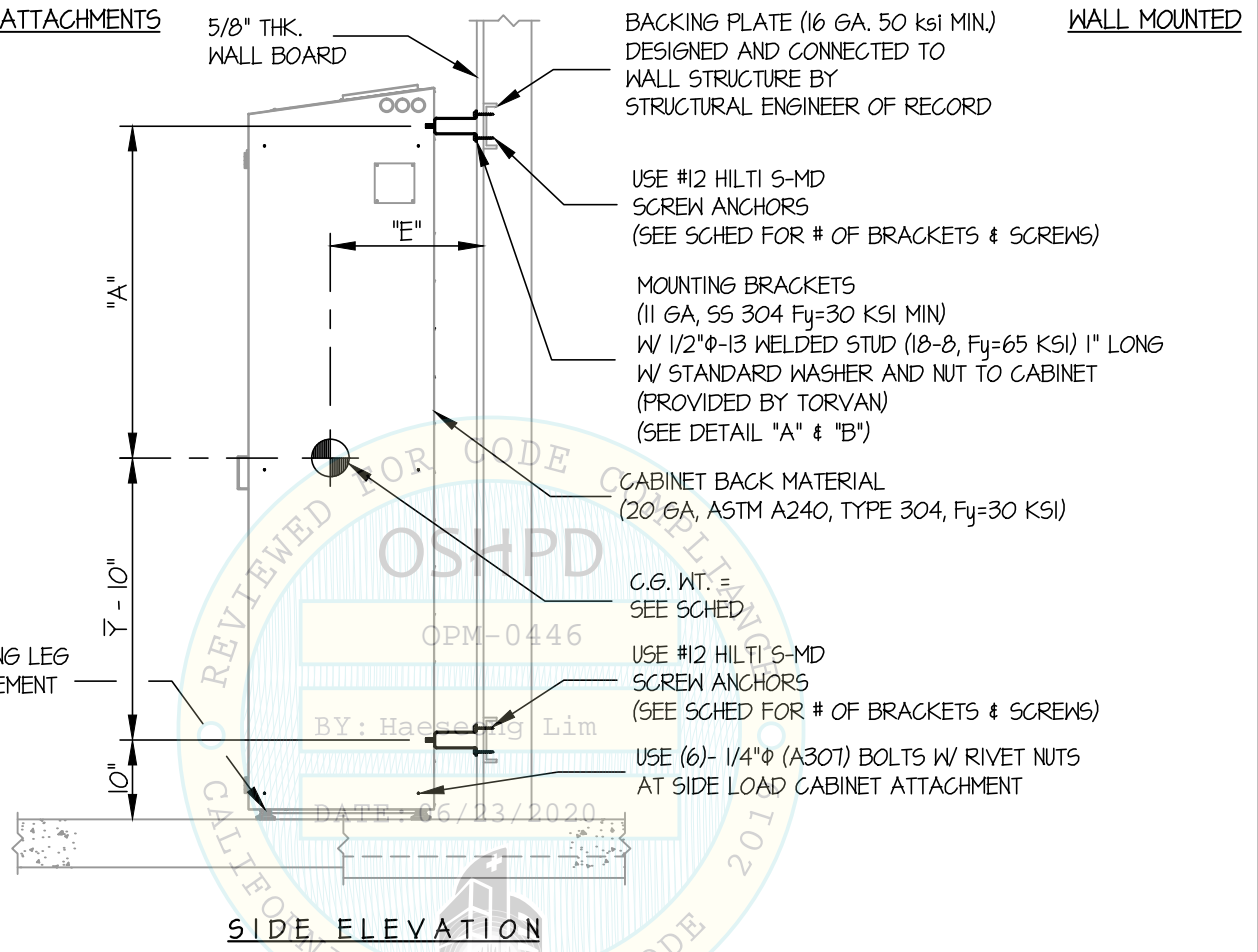
JOB NO. **11-1720**

24"- 44" DRYING CABINET (SIDE LOAD)

DATE **6/18/20**

OF **15** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS



UNIT	LOADED WEIGHT (lb.)	UNIT SELF WEIGHT (lb.)	"W" (in.)	"A" (in.)	"B" (in.)	"C" (in.)	"D" (in.)	"E" (in.)	Y-bar (in.)	# OF SCREWS PER BRACKET	+ # OF BRACKETS	Tu (lb.) PER SCREW	Vu (lb.) PER SCREW
24" DRYING	362	343	36.50	38.1	28	16.2	11.8	18.2	44.9	4	4	184	62
30" DRYING	413	394	42.95	36.8	38	21.4	16.6	18.6	46.2	4	4	158	69
36" DRYING	448	422	48.95	36.5	38	22.0	16.0	18.7	46.5	4	4	171	74
44" DRYING	481	455	56.92	37.9	48	28.1	19.9	18.0	45.1	4	6	145	56

+ TOP BRACKETS + BOTTOM BRACKETS = # OF BRACKETS



TORVAN MEDICAL

DES. **J. ROBERSON**

SHEET

10

JOB NO. **11-1720**

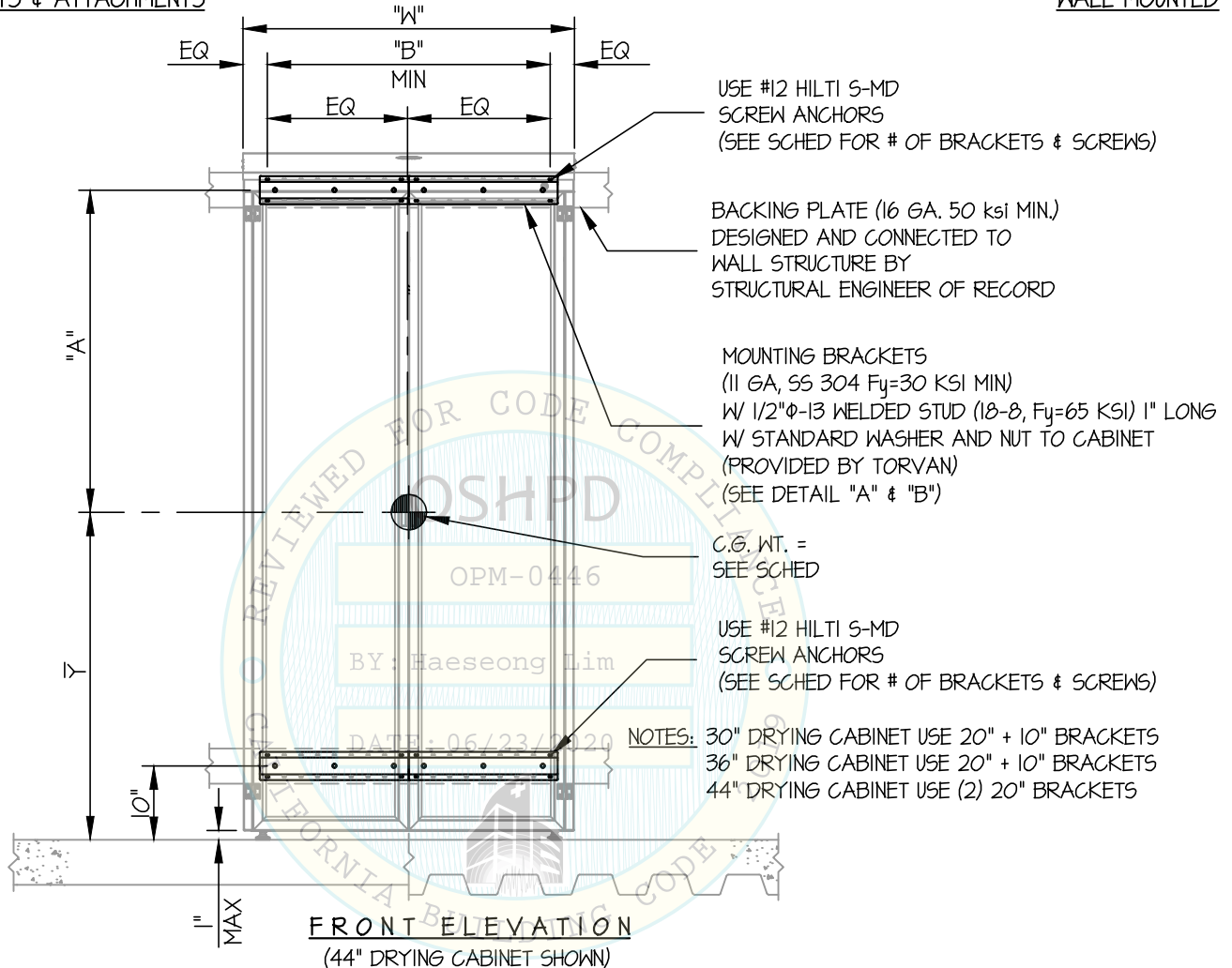
30"- 44" DRYING CABINET (TOP LOAD)

DATE **6/18/20**

OF **15** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



NOTES:

- FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
STRENGTH DESIGN IS USED. ($S_Ds = 2.20$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $z/h \leq 1$)

HORIZONTAL FORCE (E_h) = $2.64 W_p$

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.



TORVAN MEDICAL

DES. **J. ROBERSON**

SHEET

11

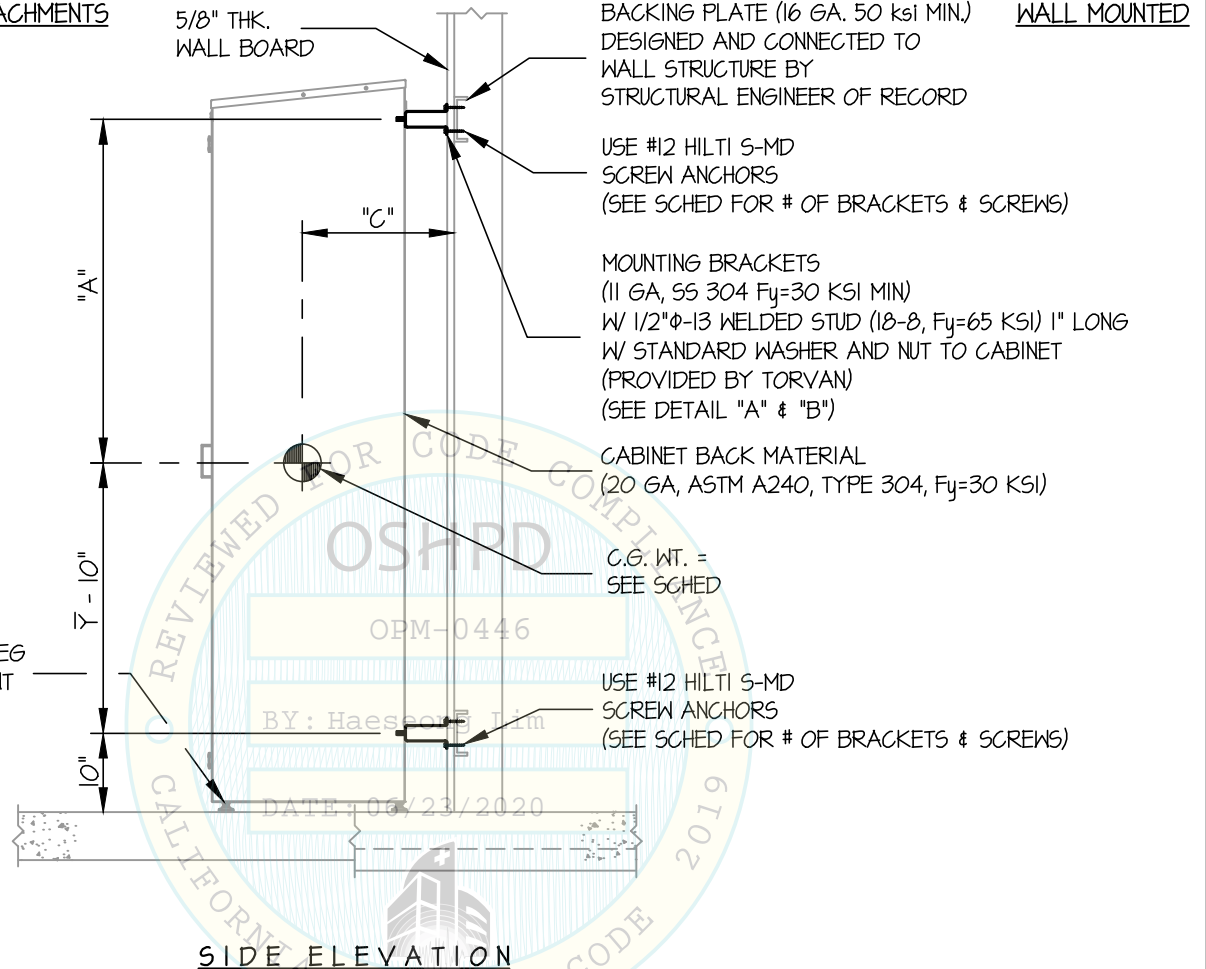
JOB NO. **11-1720**

30"- 44" DRYING CABINET (TOP LOAD)

DATE **6/18/20**

OF **15** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS



UNIT	LOADED WEIGHT (lb.)	UNIT SELF WEIGHT (lb.)	"W" (in.)	"A" (in.)	"B" (in.)	"C" (in.)	ȳ (in.)	# OF SCREWS PER BRACKET	+ # OF BRACKETS	Tu (lb.) PER SCREW	Vu (lb.) PER SCREW
30" DRYING	386	361	30.97	37.8	28	18.8	45.2	4	4	197	66
36" DRYING	428	403	36.97	37.8	28	18.8	45.2	4	4	218	73
44" DRYING	487	465	44.97	38.4	38	18.9	44.6	4	4	195	85

+ TOP BRACKETS + BOTTOM BRACKETS = # OF BRACKETS



TORVAN MEDICAL

27" & 36" SCOPE CABINET

DES. **J. ROBERSON**

JOB NO. **11-1720**

DATE **6/18/20**

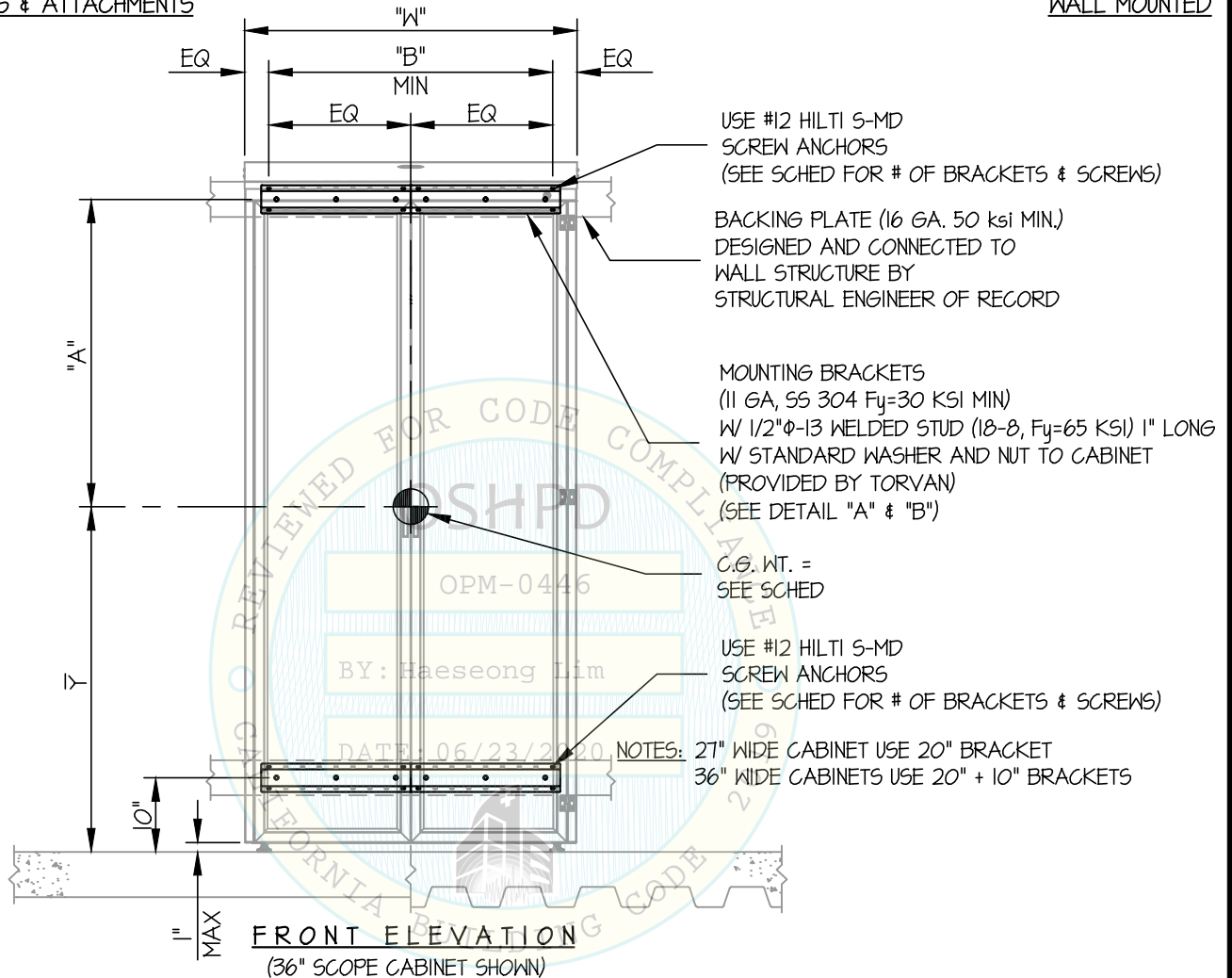
SHEET

12

OF **15** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**

STRENGTH DESIGN IS USED. ($S_{ds} = 2.20$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $z/h \leq 1$)

HORIZONTAL FORCE (E_h) = $2.64 W_p$

VERTICAL FORCE (E_v) = $0.44 W_p$

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. 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.



TORVAN MEDICAL

27" & 36" SCOPE CABINET

DES. **J. ROBERSON**

JOB NO. **11-1720**

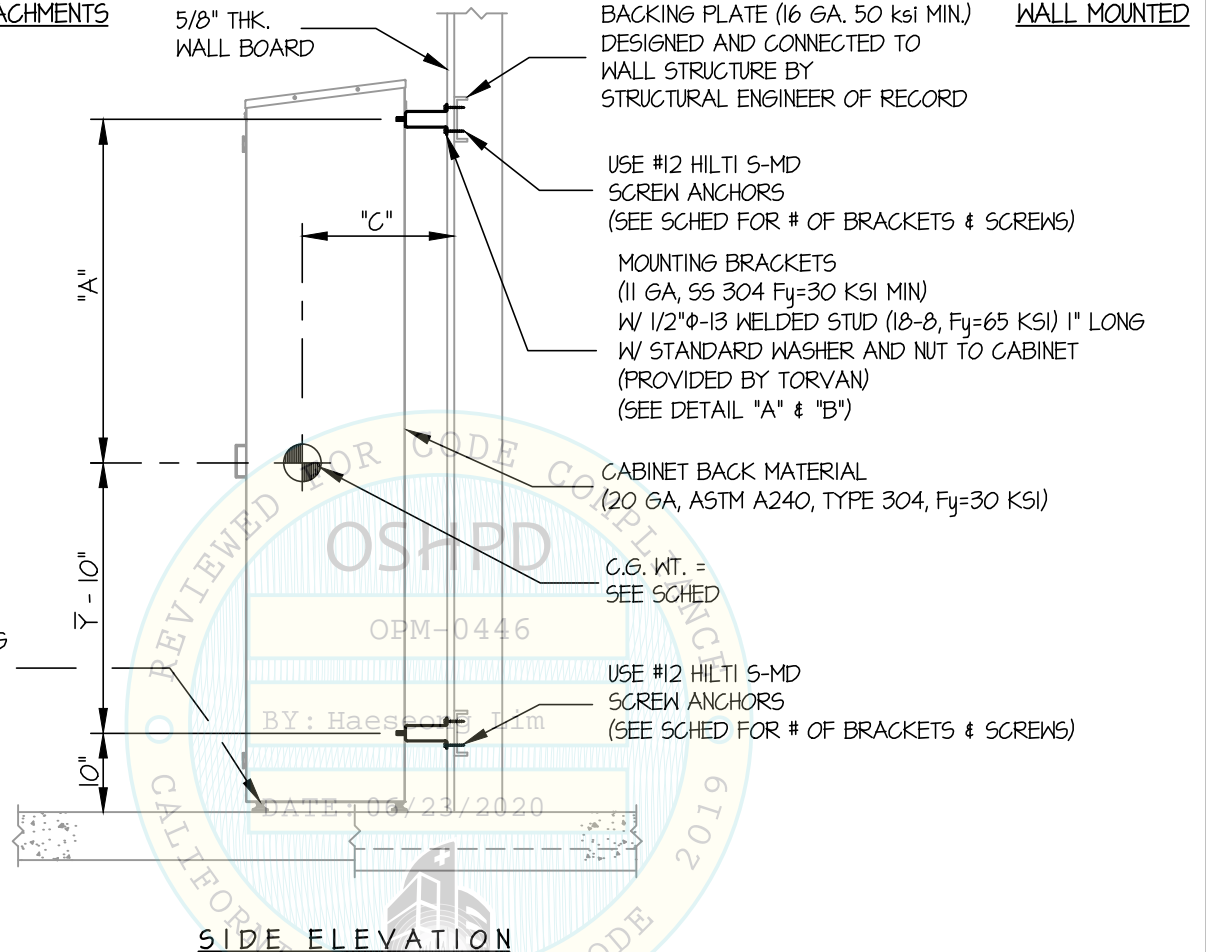
DATE **6/18/20**

SHEET

13

OF **15** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS



SIDE ELEVATION

UNIT	LOADED WEIGHT (lb.)	UNIT SELF WEIGHT (lb.)	"W" (in.)	"A" (in.)	"B" (in.)	"C" (in.)	\bar{Y} (in.)	# OF SCREWS PER BRACKET	+ # OF BRACKETS	Tu (lb.) PER SCREW	Vu (lb.) PER SCREW
27" SCOPE	419	400	29.97	43.1	18	18	39.9	8	2	199	41
36" SCOPE	557	538	38.97	42.8	28	18.6	40.2	8	4	173	54

+ TOP BRACKETS + BOTTOM BRACKETS = # OF BRACKETS



TORVAN MEDICAL

20" CABINET WALL BRACKET

DES. **J. ROBERSON**

JOB NO. **11-1720**

DATE **6/18/20**

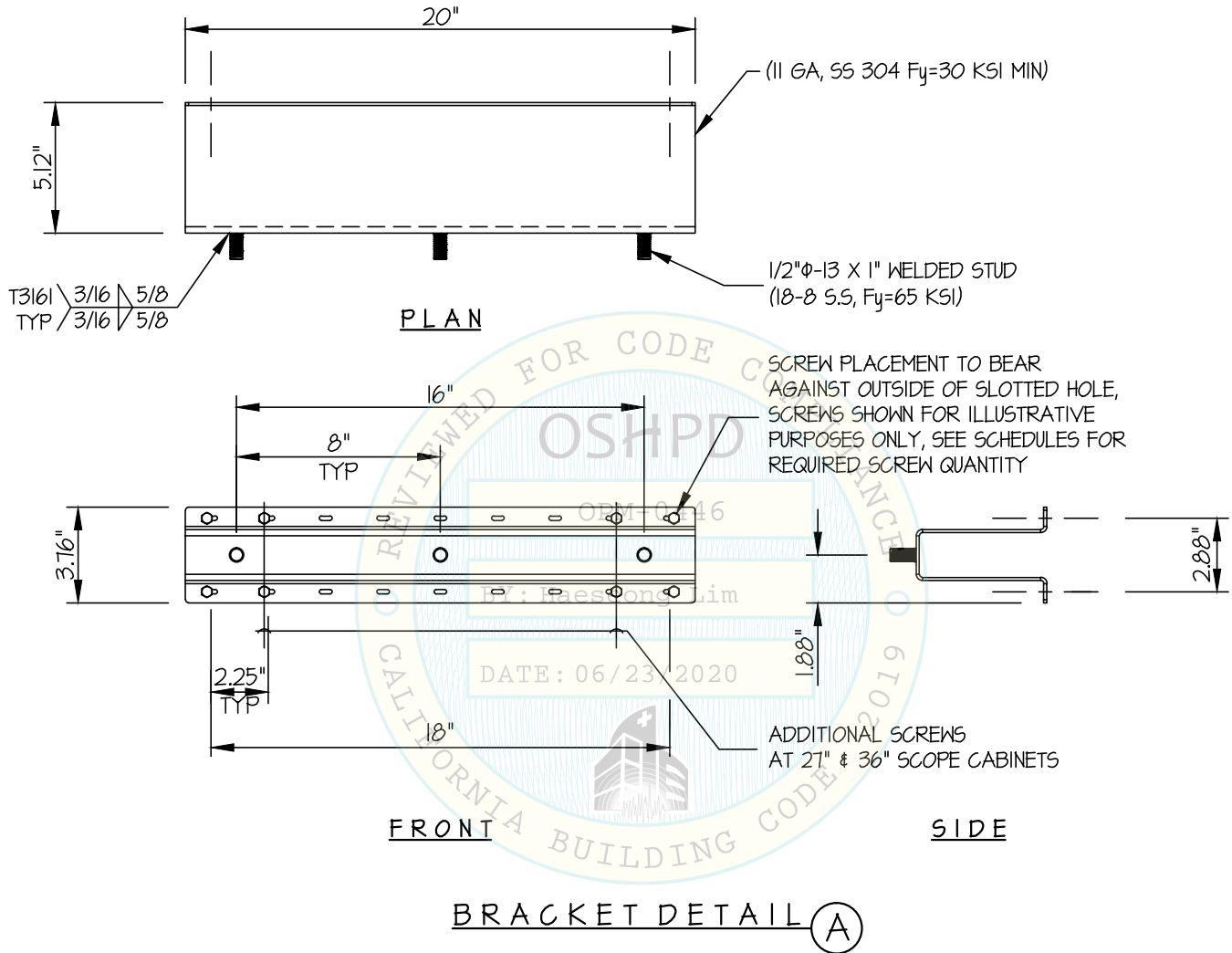
SHEET

14

OF **15** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAILS



TORVAN MEDICAL

10" CABINET WALL BRACKET

DES. **J. ROBERSON**

JOB NO. **11-1720**

DATE **6/18/20**

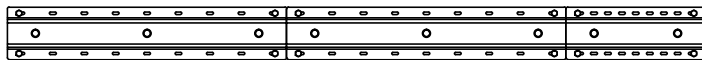
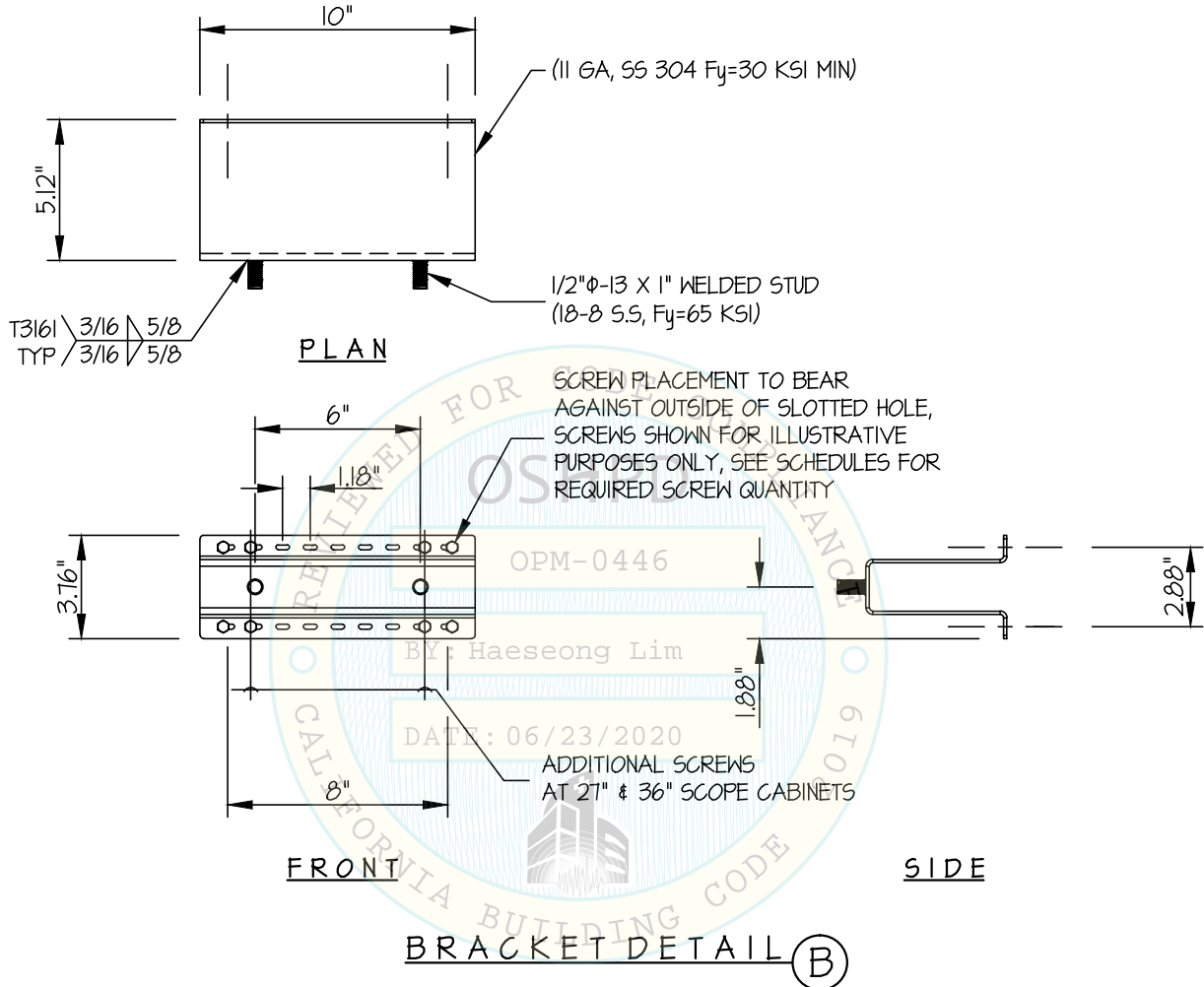
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15

OF **15** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAILS



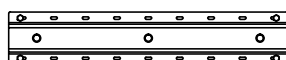
(2) 20" + 10" BRACKETS



(2) 20" BRACKETS



20" + 10" BRACKETS



20" BRACKET

NOTE: ADDITIONAL SCREWS REQUIRED
AT 27" & 36" SCOPE CABINETS
REFER TO WALL BRACKET DETAILS

