



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OPM-0339

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: New Renewal/Update

Manufacturer Information

Manufacturer: Advanced Sterilization Products

Manufacturer's Technical Representative: Curtis Felt

Mailing Address: 33 Technology Drive, Irvine, CA 92618

Telephone: (949) 507-6186

Email: curtis.felt@asp.com

Product Information

Product Name: STERRAD NX STERILIZER WITH CART

Product Type: Other Mechanical and Electrical Components

Product Model Number: STERRAD NX

General Description: Compact sterilizer for medical instruments

Applicant Information

Applicant Company Name: EASE LLC.

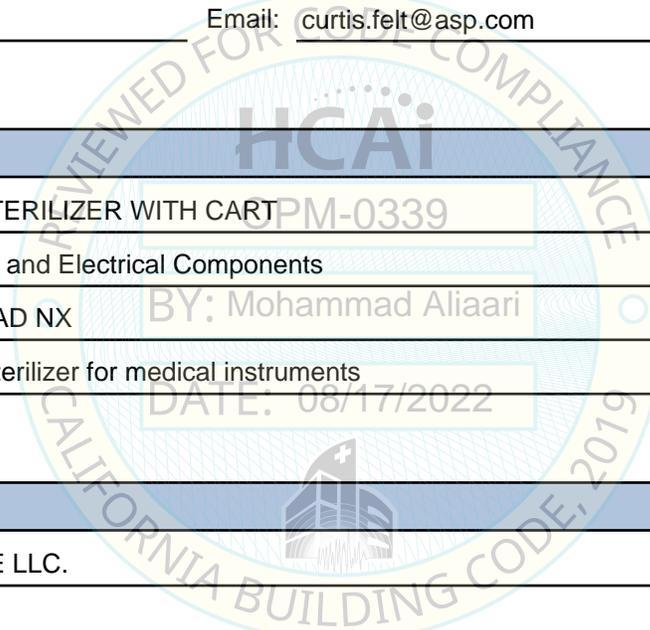
Contact Person: Tiffany Tonn

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Telephone: (406) 541-3273

Email: tiffany@easeco.com

Title: Office Manager



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

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
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: (951) 295-1892 Email: jon@EASECo.com

HCAI Special Seismic Certification Preapproval (OSP)

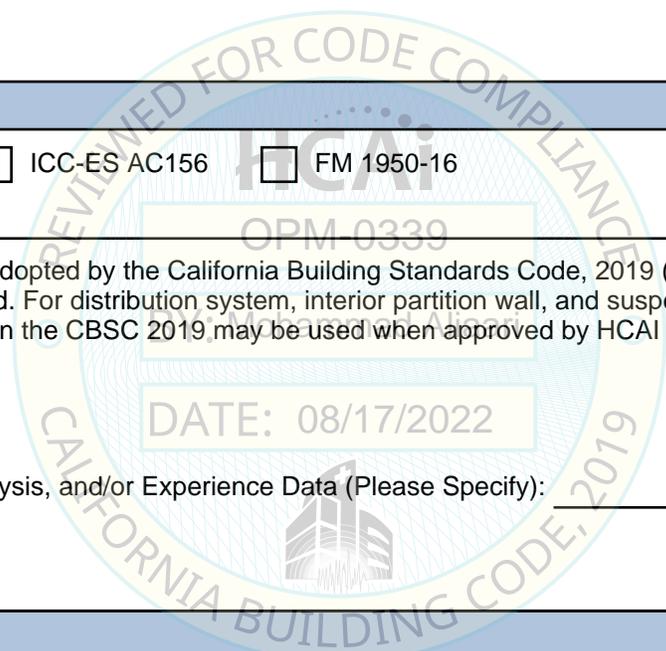
Special Seismic Certification is preapproved under OSP OSP Number: _____

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 HCAI prior to testing.

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



HCAI Approval

Date: 8/17/2022
Name: Mohammad Aliaari Title: Senior Structural Engineer
Condition of Approval (if applicable): _____

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**EQUIPMENT ANCHORAGE
& SEISMIC ENGINEERING**

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

The Department of Health Care Access and Information
PREAPPROVAL OF MANUFACTURER'S CERTIFICATION
OPM-0339

THIS PREAPPROVAL CONFORMS TO THE 2019 CALIFORNIA BUILDING CODE

MANUFACTURER: **ADVANCED STERILIZATION PRODUCTS**
EQUIPMENT NAME: **STERRAD NX WITH ALLCLEAR STERILIZER WITH CART**

Sheet: 1 of 13
Date: 8/3/22

GENERAL NOTES

1. THIS HCAI 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 WHERE S_{ds} IS NOT GREATER THAN 1.15 & 2.30. SEE DETAIL FOR APPLICABILITY
4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3,
WHERE $S_{ds} = 2.30$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.0$, $z/h = 0$ AT CONCRETE SLAB & $z/h \leq 1$ AT STERILIZER TO CART CONNECTION.
SEE FOLLOWING SHEETS FOR Ω .
WHERE $S_{ds} = 1.15$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.0$, $z/h \leq 1$ AT CONCRETE SLAB ON METAL DECK. SEE FOLLOWING SHEETS FOR Ω .
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. CONCRETE SLAB ON METAL DECK DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION IN THE BUILDING. (i.e. $z/h \leq 1$)
8. CONCRETE SLAB DETAIL VALID FOR DEMANDS SHOWN AT OR BELOW GRADE. (i.e. $z/h = 0$)
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 2019 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 SLAB TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR REPORT. AND THIS OPM.
 - E. VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY SLAB 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.



ADVANCED STERILIZATION PRODUCTS

DES. **J. ROBERSON**

SHEET

2

STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

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DATE **8/3/22**

OF **13** SHEETS

10. 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	Torque Test	Direct Tension Test
3/8"	Sand Light Weight	3000	Hilti Kwik Bolt TZ2 (CARBON STEEL)	ESR-4266	2"	6.75"	16"	See Detail "A"	30 FT-LB	N/A
3/8"	Normal Weight	3000	Hilti Kwik Bolt TZ2 (CARBON STEEL)	ESR-4266	2"	3"	12"	4"	30 FT-LB	1488 lb

- B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 12" AWAY MINIMUM (i.e. - CORNER). SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

- C. TESTING AND SPECIAL INSPECTION OF EXPANSION ANCHORS SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY EMPLOYED BY THE FACILITY OWNER PER CBC 1704A & 1910A.5 AND CAC 7-149. ALL REPORTS SHALL BE SENT TO THE INSPECTOR OF RECORD, OWNER AND THE ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE.

- (i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST OR TORQUE TEST 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.
- TORQUE TEST: THE APPLICABLE TORQUE MUST BE ACHIEVED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE : 1/2 TURN OF THE NUT

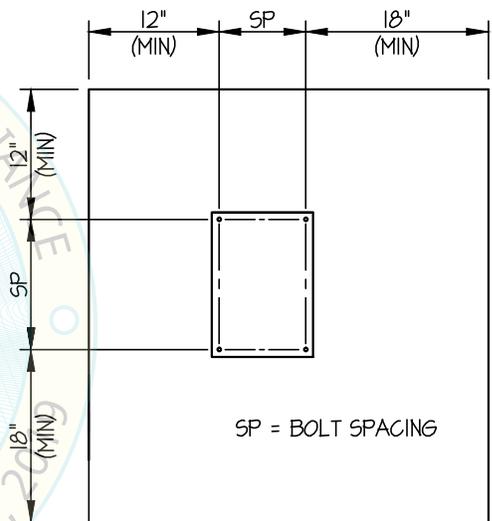
- (iii) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.

- D. AVOID DAMAGING EXISTING STEEL REINFORCING IN CONCRETE SLAB WHEN INSTALLING CONCRETE EXPANSION ANCHORS.

- E. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT & WASHER.

11. BOLTS THROUGH CONCRETE ON METAL DECK

- A. BOLTS SHALL BE TORQUED BY 3/4 TURN OF THE NUTS AFTER THE SNUG TIGHT (THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT) CONDITION IS ACHIEVED, UNLESS OTHERWISE NOTED.
- B. THROUGH BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16) FOR CONCRETE.
- C. THROUGH-BOLTS IN CONCRETE SHALL RECEIVE SPECIAL INSPECTION AND TESTING (THROUGH BOLTS WITH STEEL TO STEEL CONNECTION IN TENSION DO NOT REQUIRE TENSION TESTING) IN ACCORDANCE WITH REQUIREMENTS FOR POST-INSTALLED ANCHORS.



TYPICAL CONCRETE EDGE DETAIL
(SLAB ON GRADE ONLY)



ADVANCED STERILIZATION PRODUCTS

DES. **J. ROBERSON**

SHEET

3

STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

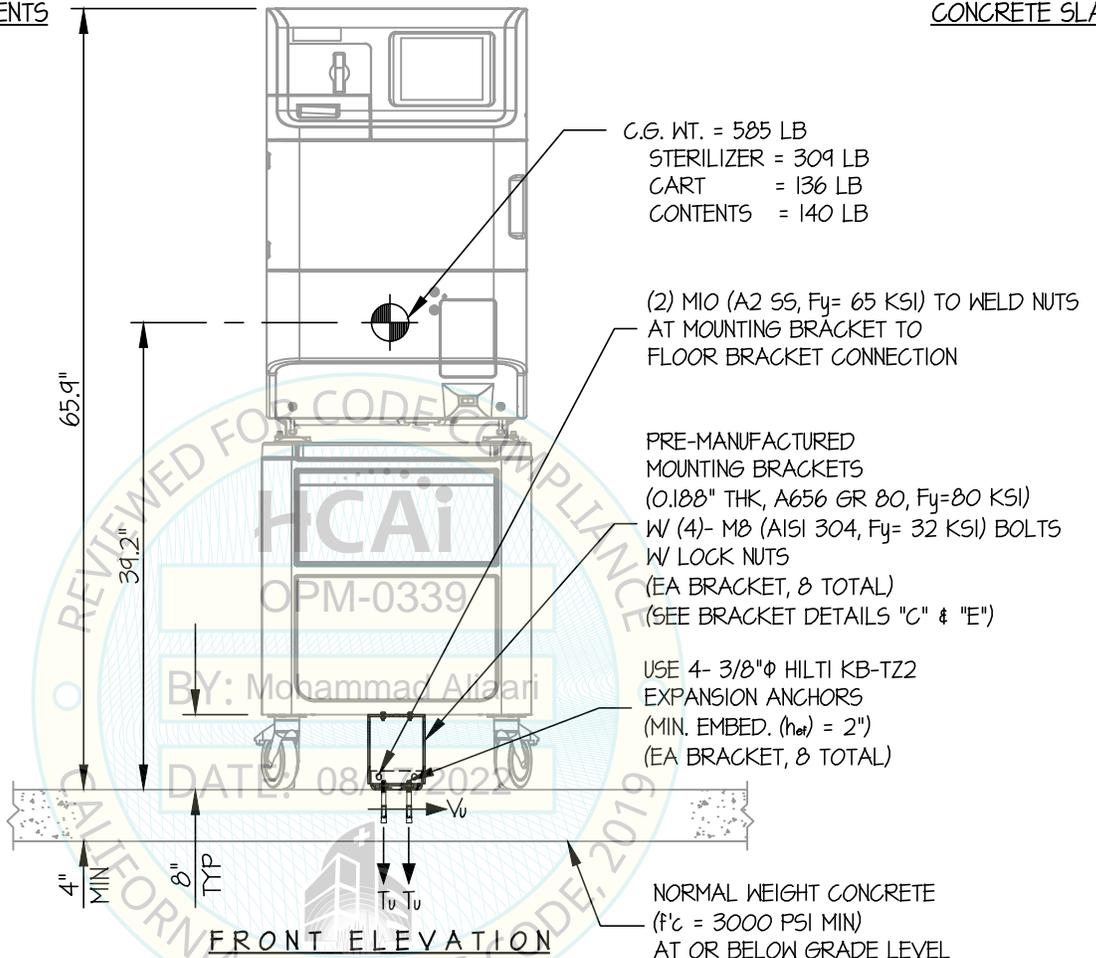
JOB NO. **11-2206**

DATE **8/3/22**

OF **13** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



T_u = 1004 LB/BOLT (MAX)
 V_u = 204 LB/BOLT (MAX)
 (VALUES INCLUDE Ω)

NOTES:

- FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
 STRENGTH DESIGN IS USED. (SDS = 2.30, ap = 10, lp = 15, Rp = 15, Ω_o = 2.0, z/h = 0)
 HORIZONTAL FORCE (E_h) = 1.035 W_p
 HORIZONTAL FORCE (E_{mh}) = 2.07 W_p (FOR CONCRETE ANCHORAGE)
 VERTICAL FORCE (E_v) = 0.46 W_p
- CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THESE CALCULATIONS ENCOMPASS ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
- THIS CALCULATION ADDRESSES A GENERIC SET OF CONDITIONS AND WAS PREPARED WITHOUT KNOWLEDGE OF ANY PROJECT SITE CONDITIONS. COMPATIBILITY FOR USE WITH ANY PROJECT SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD (SEOR) OF THE INSTALLATION. USE OF THIS CALCULATION IN SUPPORT OF AN INSTALLATION REQUIRES THE EXPRESS, WRITTEN APPROVAL AND DIRECTION BY THE SEOR.
- STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL VERIFY ALL CONDITIONS, EVALUATE INTERACTION WITH ADJACENT EQUIPMENT AND ANCHORS, AND PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
- SEE GENERAL NOTES: SHEETS 1 AND 2



ADVANCED STERILIZATION PRODUCTS

STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

DES. J. ROBERSON

JOB NO. 11-2206

DATE 8/3/22

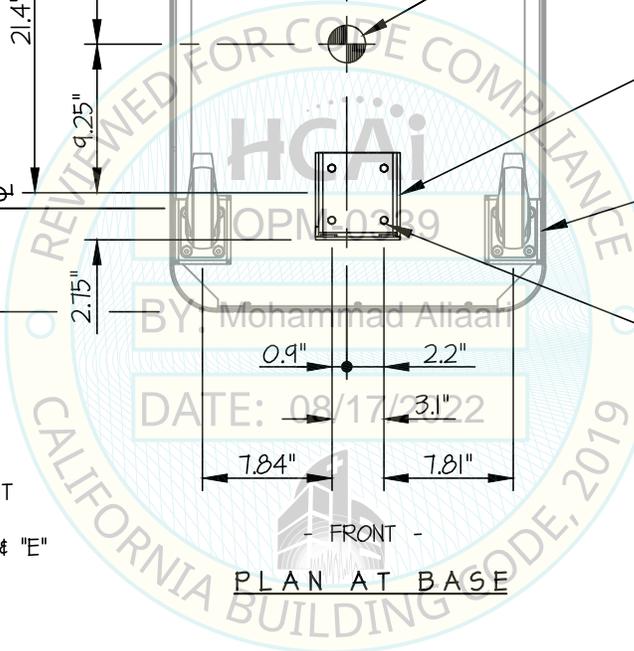
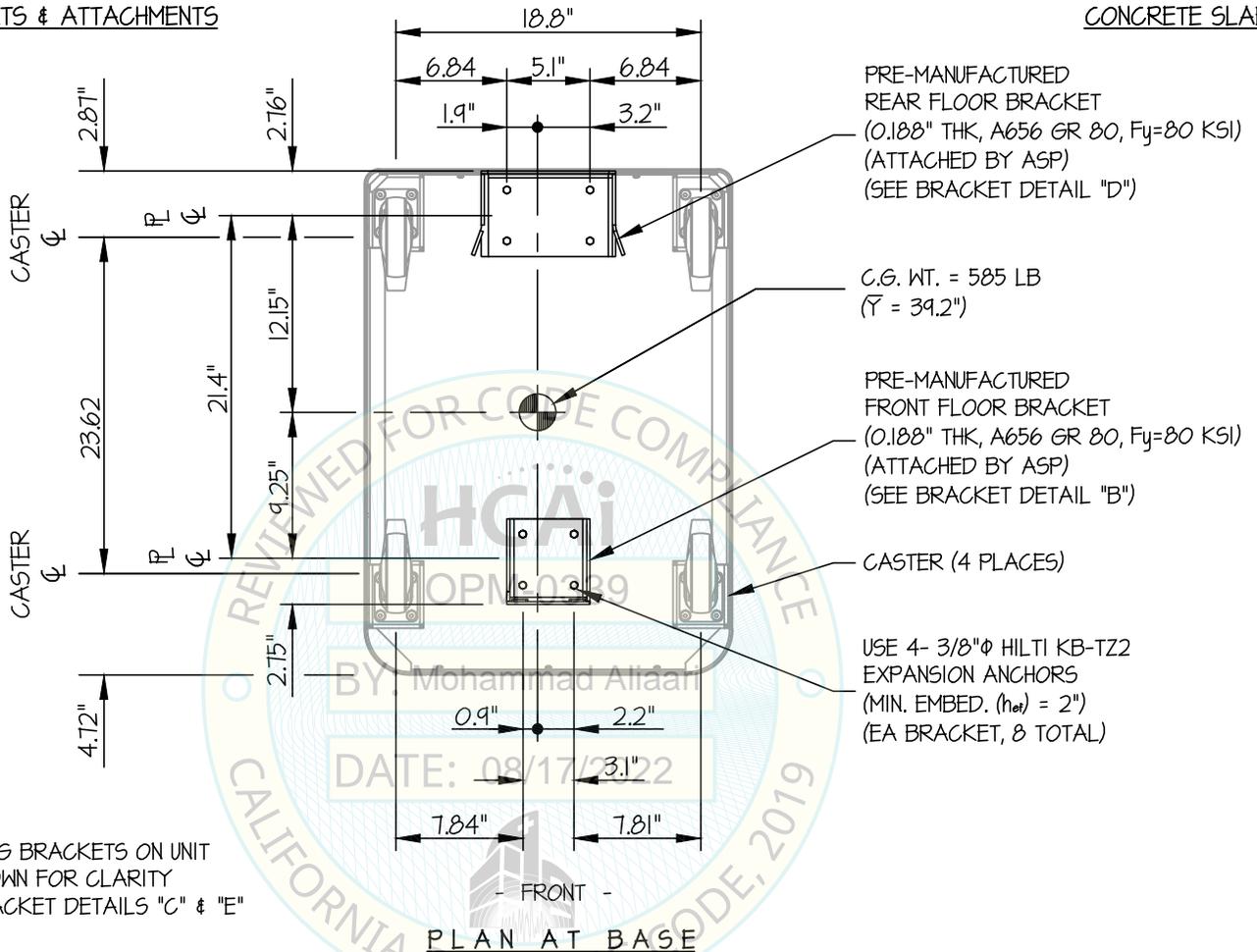
SHEET

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OF 13 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



Jonathan Roberson
 REGISTERED PROFESSIONAL ENGINEER
 No. 4197
 EXP. 6-30-2024
 8/3/22
 STRUCTURAL
 STATE OF CALIFORNIA

ADVANCED STERILIZATION PRODUCTS

DES. J. ROBERSON

SHEET

5

STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

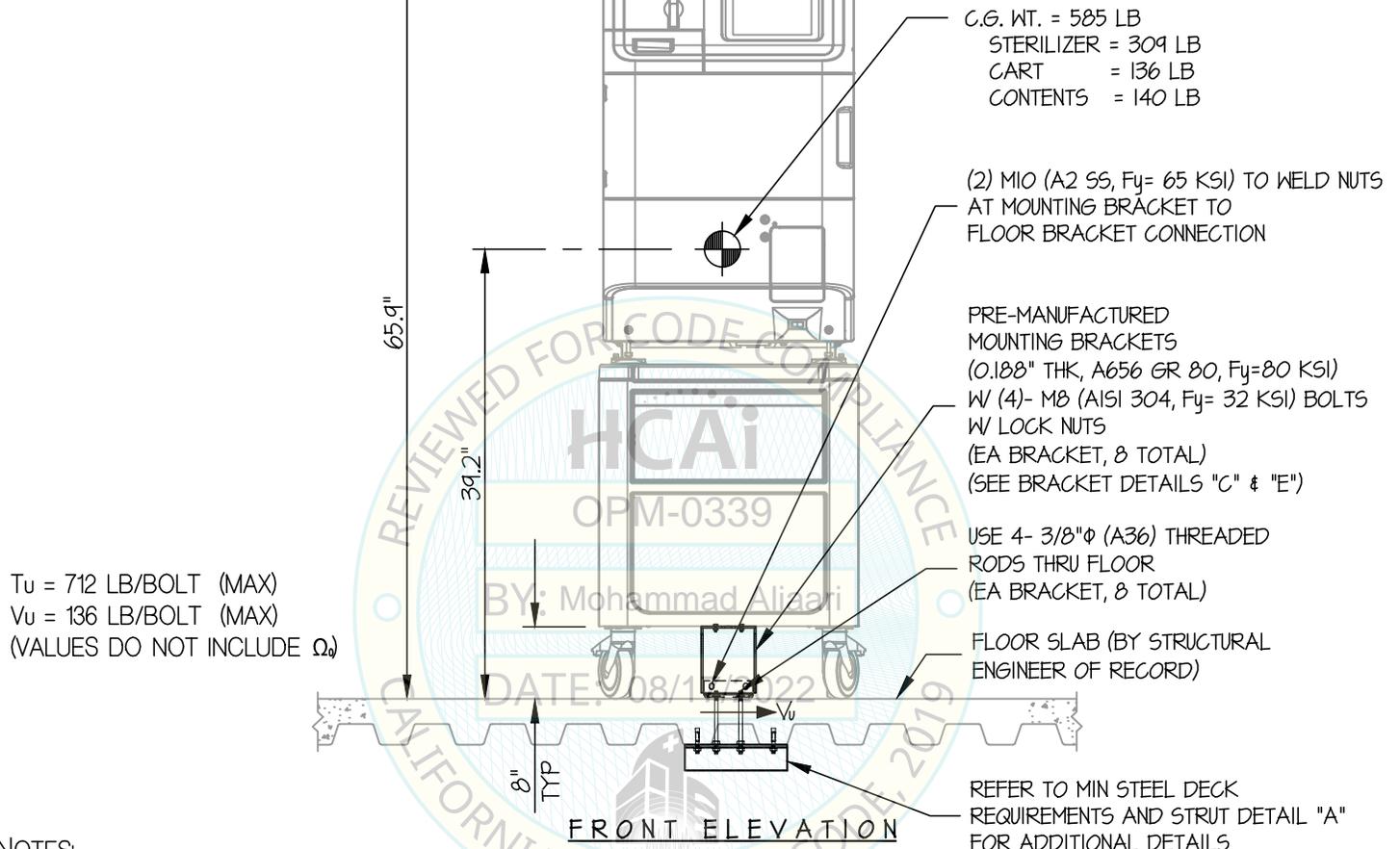
JOB NO. 11-2206

DATE 8/3/22

OF 13 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



$T_u = 712 \text{ LB/BOLT (MAX)}$
 $V_u = 136 \text{ LB/BOLT (MAX)}$
 (VALUES DO NOT INCLUDE Ω_d)

NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
 STRENGTH DESIGN IS USED. ($SDS = 1.15$, $a_p = 10$, $l_p = 15$, $R_p = 15$, $\Omega_o = 2.0$, $z/h \leq 1$)

HORIZONTAL FORCE (E_h) = 138 Wp

HORIZONTAL FORCE (E_{mh}) = 2.76 Wp (FOR CONCRETE ANCHORAGE)

VERTICAL FORCE (E_v) = 0.23 Wp

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THESE CALCULATIONS ENCOMPASS ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. THIS CALCULATION ADDRESSES A GENERIC SET OF CONDITIONS AND WAS PREPARED WITHOUT KNOWLEDGE OF ANY PROJECT SITE CONDITIONS. COMPATIBILITY FOR USE WITH ANY PROJECT SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD (SEOR) OF THE INSTALLATION. USE OF THIS CALCULATION IN SUPPORT OF AN INSTALLATION REQUIRES THE EXPRESS, WRITTEN APPROVAL AND DIRECTION BY THE SEOR.

4. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL VERIFY ALL CONDITIONS, EVALUATE INTERACTION WITH ADJACENT EQUIPMENT AND ANCHORS, AND PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.

5. SEE GENERAL NOTES: SHEETS 1 AND 2



ADVANCED STERILIZATION PRODUCTS

STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

DES. J. ROBERSON

JOB NO. 11-2206

DATE 8/3/22

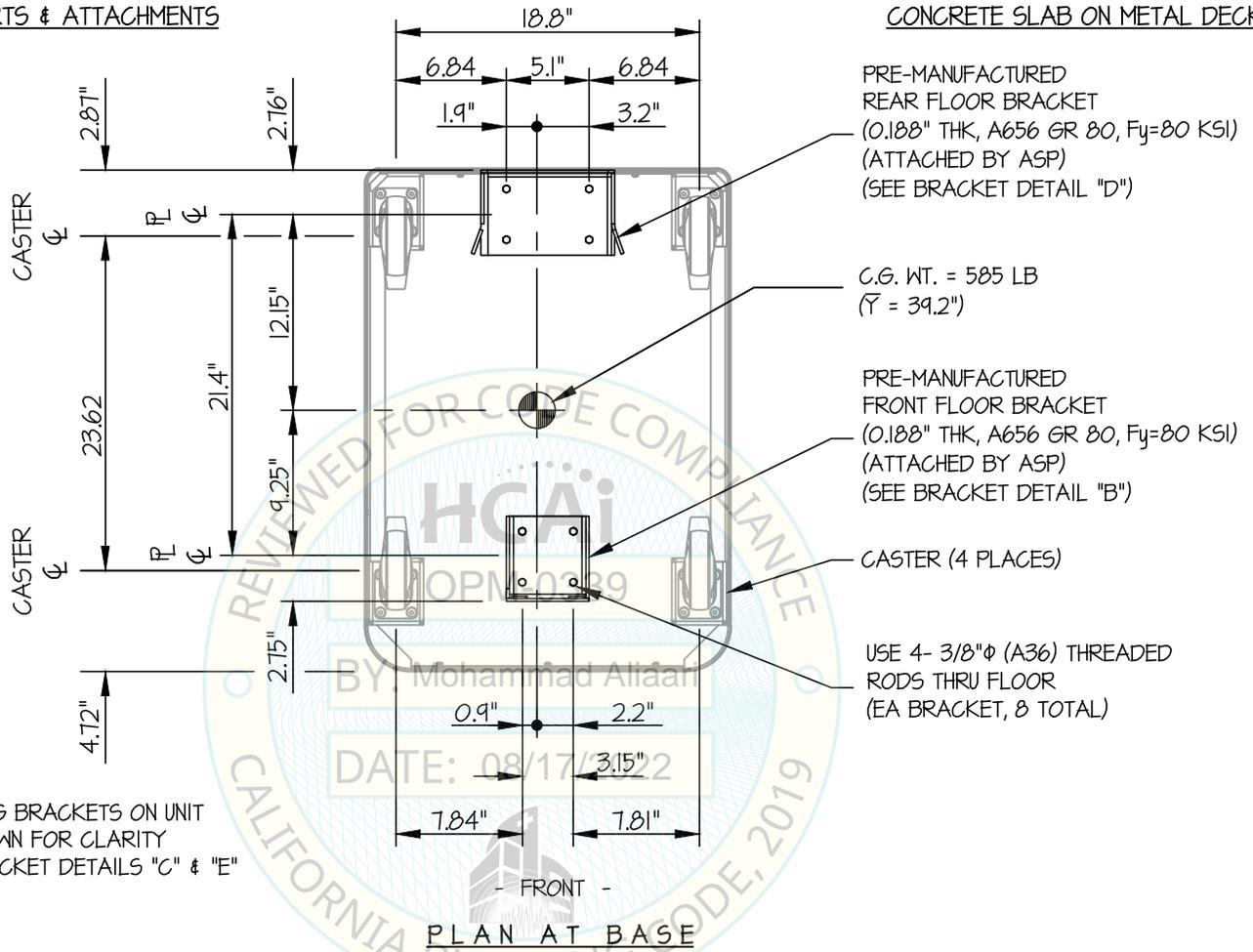
SHEET

6

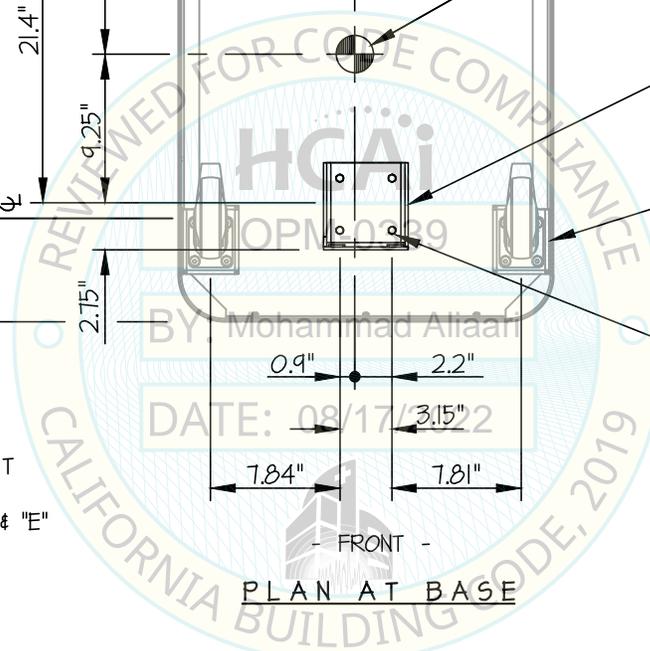
OF 13 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



NOTE: MOUNTING BRACKETS ON UNIT NOT SHOWN FOR CLARITY SEE BRACKET DETAILS "C" & "E"



Jonathan Roberson
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 No. 4197
 EXP. 6-30-2024
 8/3/22
 STRUCTURAL
 STATE OF CALIFORNIA

ADVANCED STERILIZATION PRODUCTS

DES. **J. ROBERSON**

SHEET

7

STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

JOB NO. **11-2206**

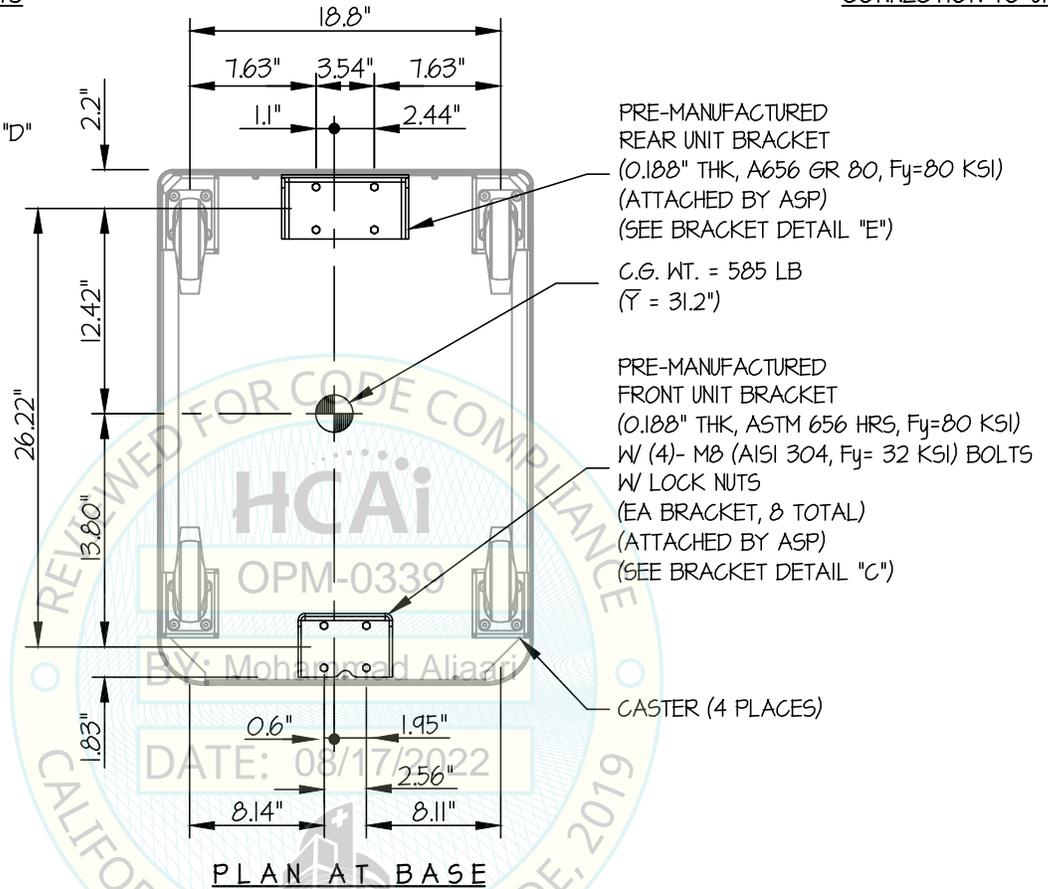
DATE **8/3/22**

OF **13** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONNECTION TO UNIT

NOTE: FLOOR BRACKETS
NOT SHOWN FOR CLARITY
SEE BRACKET DETAILS "B" & "D"



$T_u = 1931 \text{ LB/BOLT (MAX)}$
 $V_u = 136 \text{ LB/BOLT (MAX)}$
(VALUES DO NOT INCLUDE Ω_d)

Jonathan Roberson
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No. 4197
EXP. 6-30-2024
8/3/22
STRUCTURAL
STATE OF CALIFORNIA

ADVANCED STERILIZATION PRODUCTS

DES. **J. ROBERSON**

SHEET

8

STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

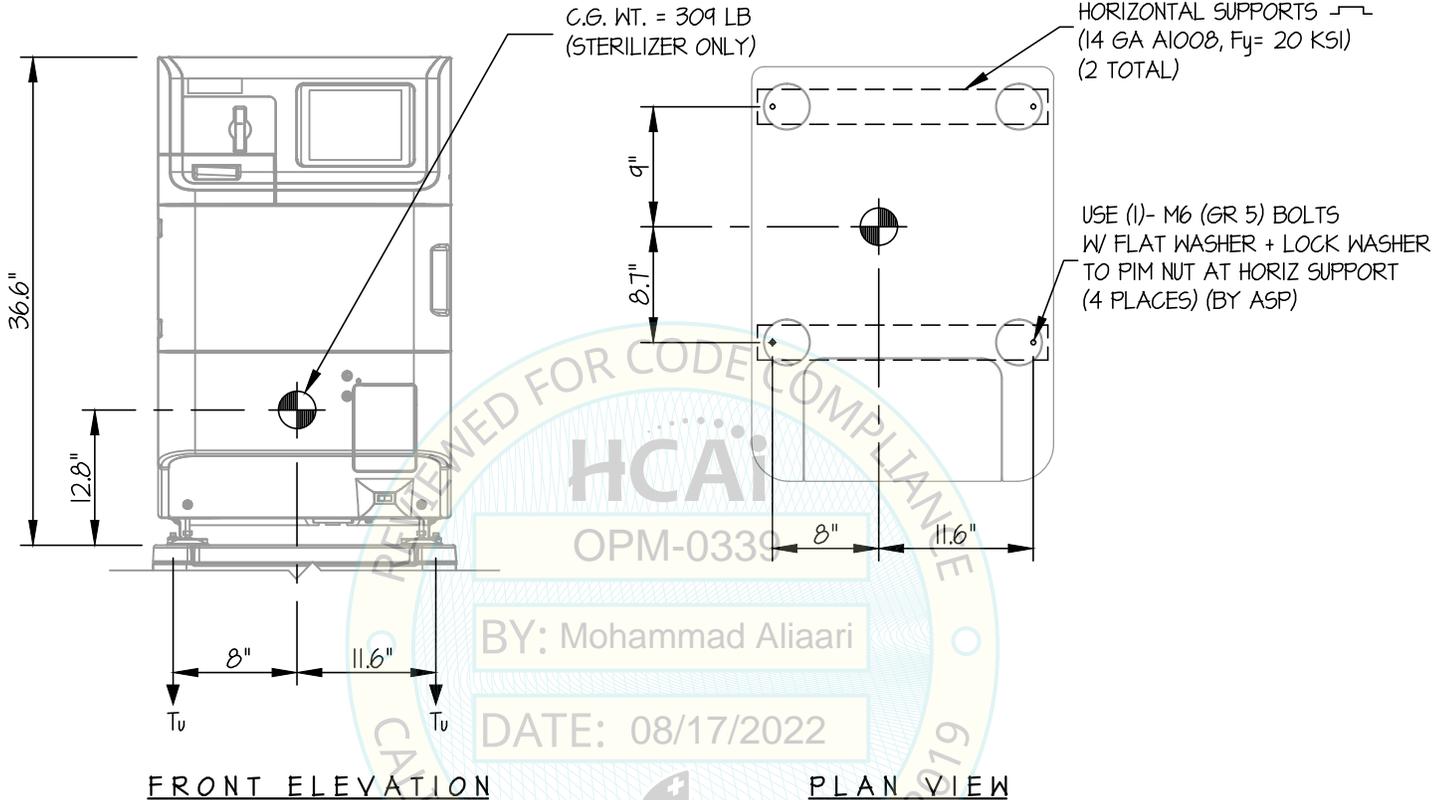
JOB NO. **11-2206**

DATE **8/3/22**

OF **13** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

STERILIZER TO CART CONNECTION



$T_u = 409 \text{ LB/BOLT (MAX)}$
 $V_u = 317 \text{ LB/BOLT (MAX)}$
(VALUES DO NOT INCLUDE Ω)

NOTES:

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

STRENGTH DESIGN IS USED. ($SDS = 2.30$, $a_p = 10$, $l_p = 15$, $R_p = 15$, $z/h \leq 1$)

HORIZONTAL FORCE (E_h) = $2.76 W_p$

VERTICAL FORCE (E_v) = $0.46 W_p$

- CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THESE CALCULATIONS ENCOMPASS ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
- SEE GENERAL NOTES: SHEETS 1 AND 2



ADVANCED STERILIZATION PRODUCTS

DES. **J. ROBERSON**

SHEET

9

STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

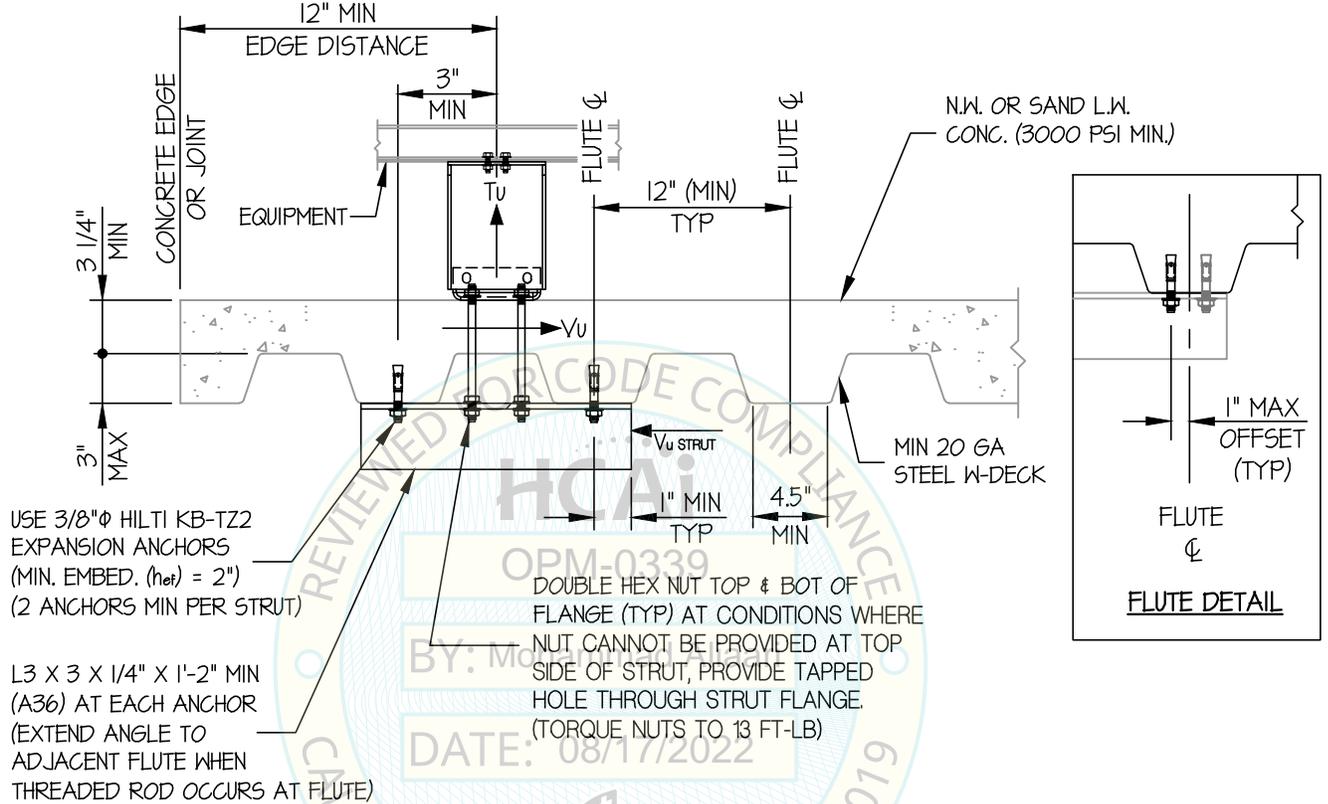
JOB NO. **11-2206**

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OF **13** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE DETAILS



MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL (A)

Jonathan Roberson

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2024
8/3/22
STRUCTURAL
STATE OF CALIFORNIA

ADVANCED STERILIZATION PRODUCTS

STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

DES. J. ROBERSON

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SHEET

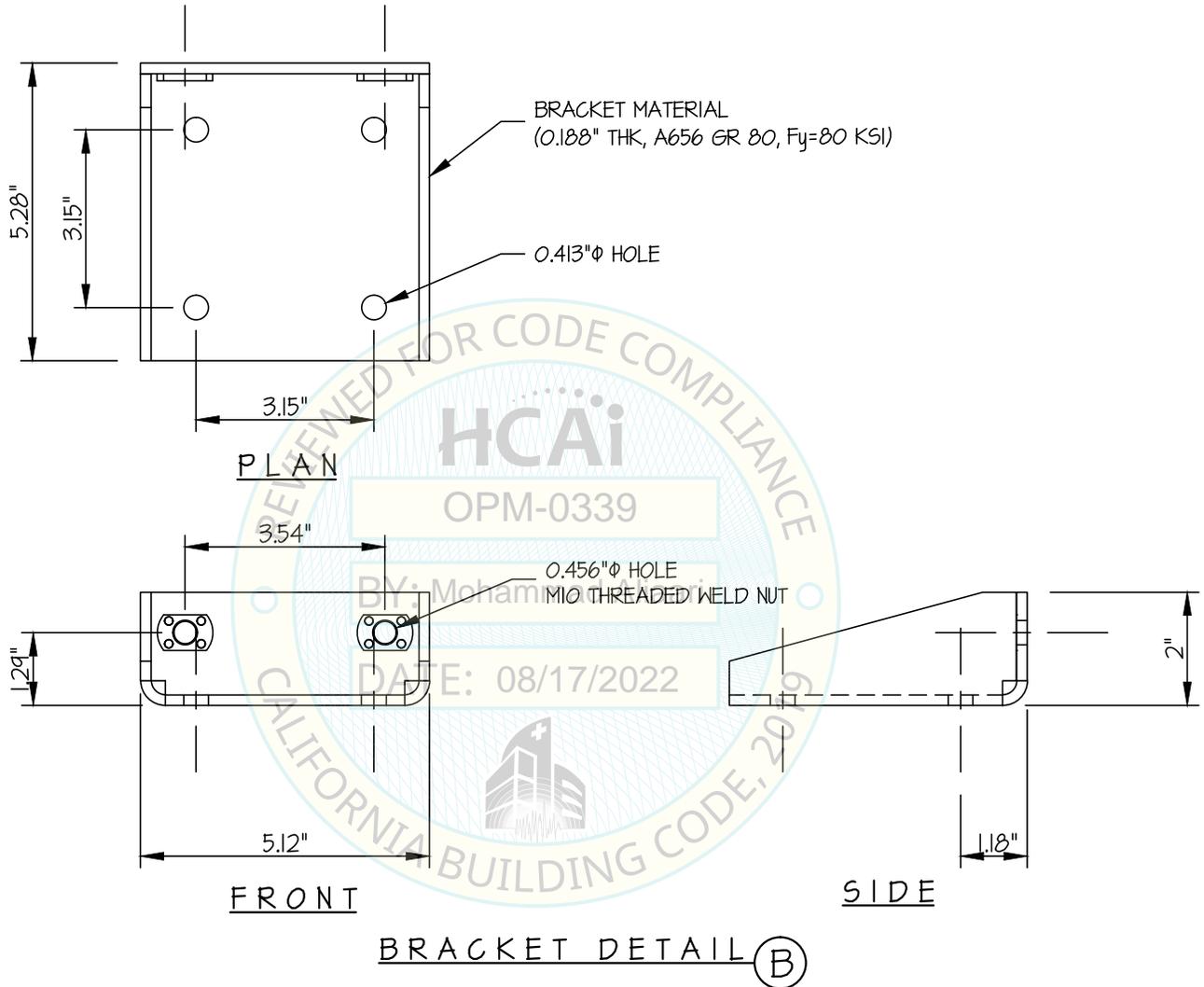
10

OF 13 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

FRONT FLOOR BRACKET

BRACKET DETAILS



ADVANCED STERILIZATION PRODUCTS

STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

DES. J. ROBERSON

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SHEET

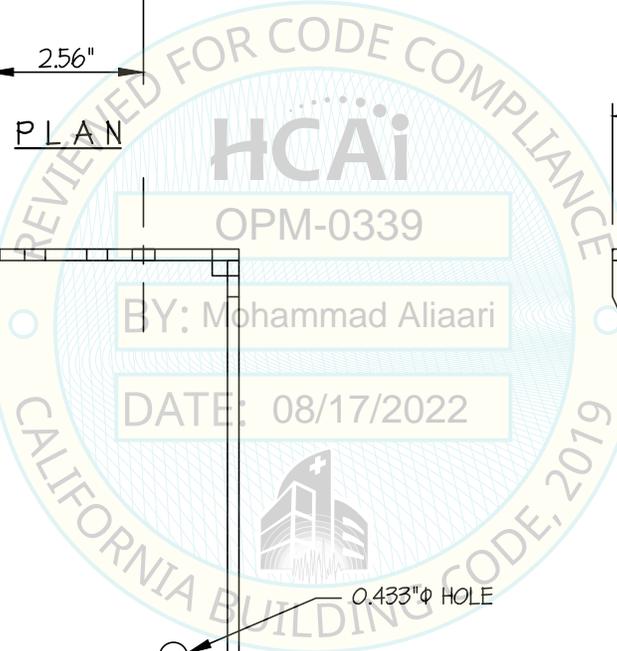
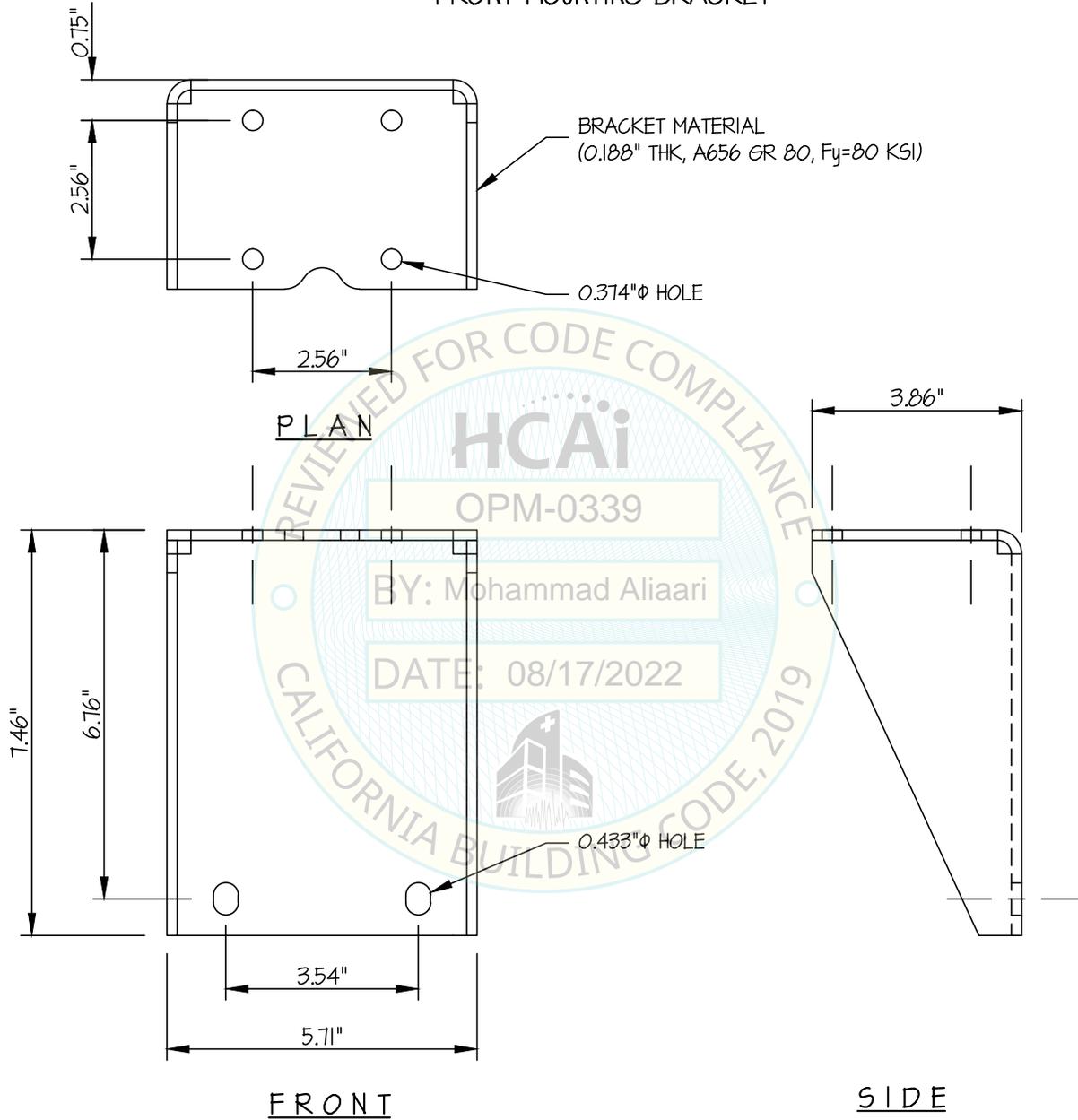
11

OF 13 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

FRONT MOUNTING BRACKET

BRACKET DETAILS



BRACKET DETAIL (C)

SIDE



ADVANCED STERILIZATION PRODUCTS

DES. J. ROBERSON

SHEET

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STERRAD NX WITH ALLCLEAR STERILIZER WITH CART

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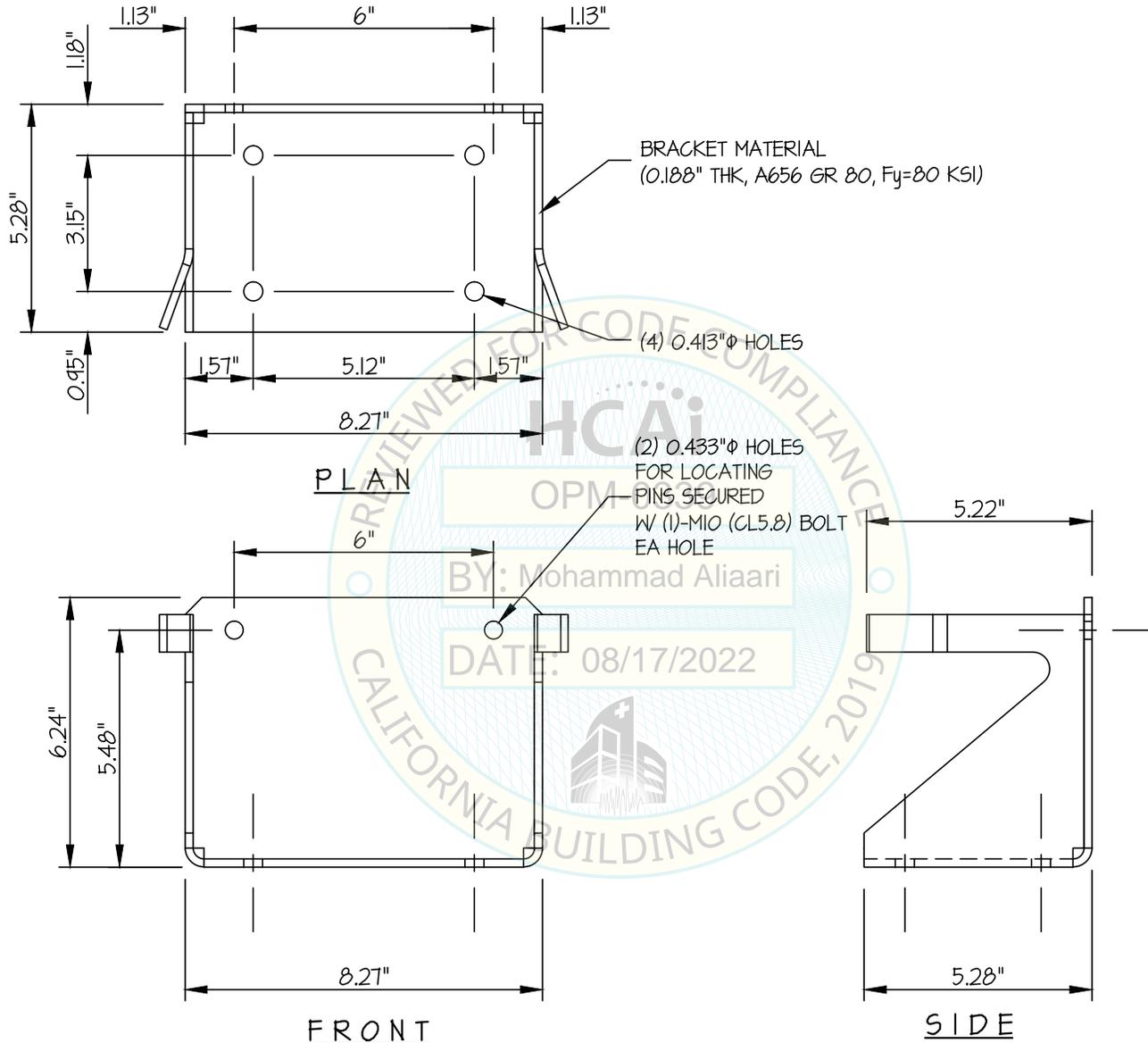
DATE 8/3/22

OF 13 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

REAR FLOOR BRACKET

BRACKET DETAILS



BRACKET DETAIL (D)



ADVANCED STERILIZATION PRODUCTS

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SHEET

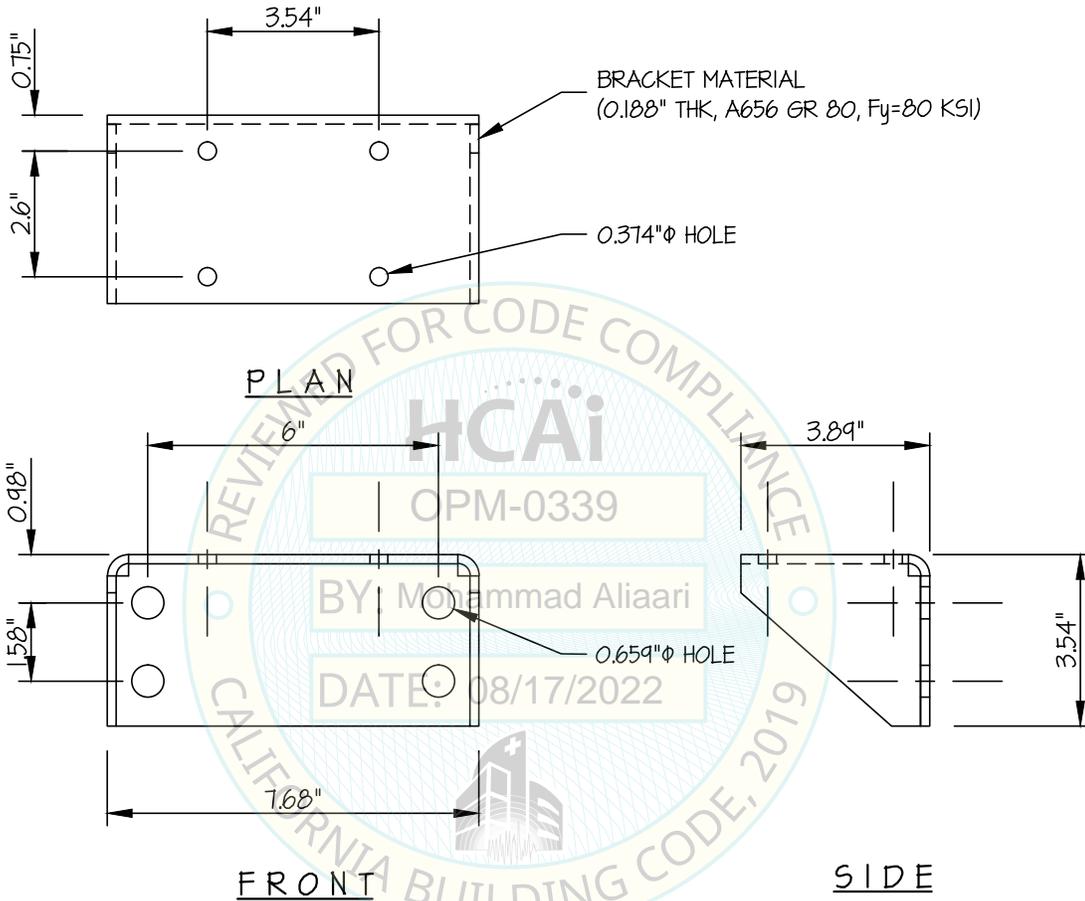
13

OF 13 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

REAR MOUNTING BRACKET

BRACKET DETAILS



BRACKET DETAIL (E)

