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

OFFICE USE ONLY

APPLICATION #: OPM-0552

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: [X] New [ ] Renewal/Update

Manufacturer Information

Manufacturer: Steris Corporation

Manufacturer's Technical Representative: Xavier Elie-Dit-Cosaque

Mailing Address: 490, boul., Armand-Paris, QC G1C 8A3

Telephone: (418) 664-1549 Email: Xavier_Elie-Dit-Cosaque@steris.com

Product Information

Product Name: ATLAS WAV

Product Type: Other Mechanical or Electrical Component

Product Model Number: N/A

General Description: Single Storage Table Assembly & Double Storage Table Assembly - Racks & Conveyors that are used in Washing/Disinfecting of Medical Equipment

Applicant Information

Applicant Company Name: EASE

Contact Person: Jonathan Roberson

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

Telephone: (909) 606-7622 Email: jon@easeco.com

Title:

Registered Design Professonal 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: (909) 606-6722 Email: jon@EASECo.com

OSHPD 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 OSHPD prior to testing.

☒ Analysis

☐ Experience Data

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

OSHPD Approval

Date: 5/27/2020

Name: Haeseong Lim Title: Senior Structural Engineer

Condition of Approval (if applicable):

EASE
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-0552-19

THIS PREAPPROVAL CONFORMS TO THE 2019 CALIFORNIA BUILDING CODE

MANUFACTURER: **STERIS CORPORATION**

EQUIPMENT NAME: **SINGLE STORAGE TABLE ASSY / DOUBLE STORAGE TABLE ASSY**

Date: 5/15/20

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 WHERE S_{DS} IS NOT GREATER THAN 2.20 & 1.40. 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} = 1.40, a_p = 1.0, I_p = 1.5, R_p = 1.5, z/h $\leq$ 1 AT CONCRETE SLAB ON METAL DECK. SEE FOLLOWING SHEETS FOR Ω_o
   WHERE S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, z/h = 0 AT CONCRETE SLAB. SEE FOLLOWING SHEETS FOR Ω_o
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.

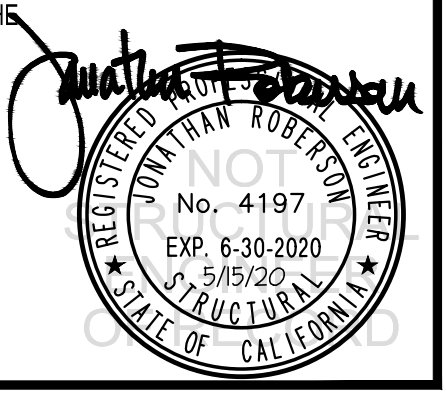
   B. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2019 CBC AND WITH THE DETAILS, MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PREAPPROVAL DOCUMENTS.

   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 6hef FROM THIS UNIT'S ANCHORS.



STERIS CORPORATION

ATLAS WAV
SINGLE / DOUBLE STORAGE TABLE ASSY

DES. J. ROBERSON
JOB NO. 14-1904
DATE 5/15/20

SHEET 2 OF 15 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.	Eff. Embed.	Min. Spacing	Min. Edge Dist.	Min. Conc. Thickness	Torque Test	Direct Tension Test
3/8"	Normal Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	2"	3"	18"	4"	25 FT-LB	1204 lb
3/8"	Sand Light Weight	3000	Simpson Strong Bolt 2	ESR-3037	1.5"	3.625"	12"	3-1/4"	30 FT-LB	590 lb

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 12" & 18" 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.

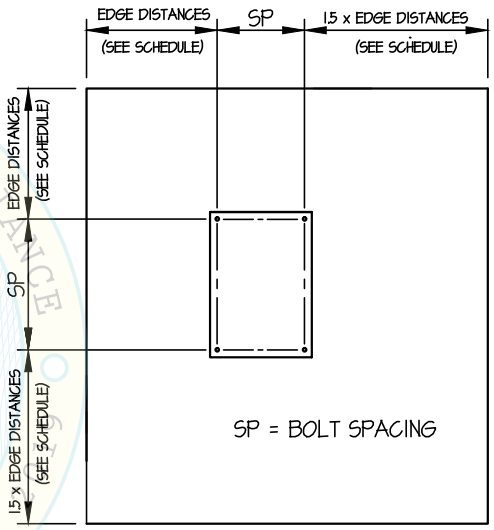
(ii) ACCEPTANCE CRITERIA:

- 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

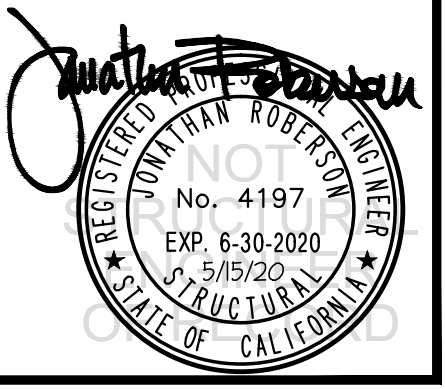
(iii) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.

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

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



TYPICAL CONCRETE EDGE DETAIL



STERIS CORPORATION

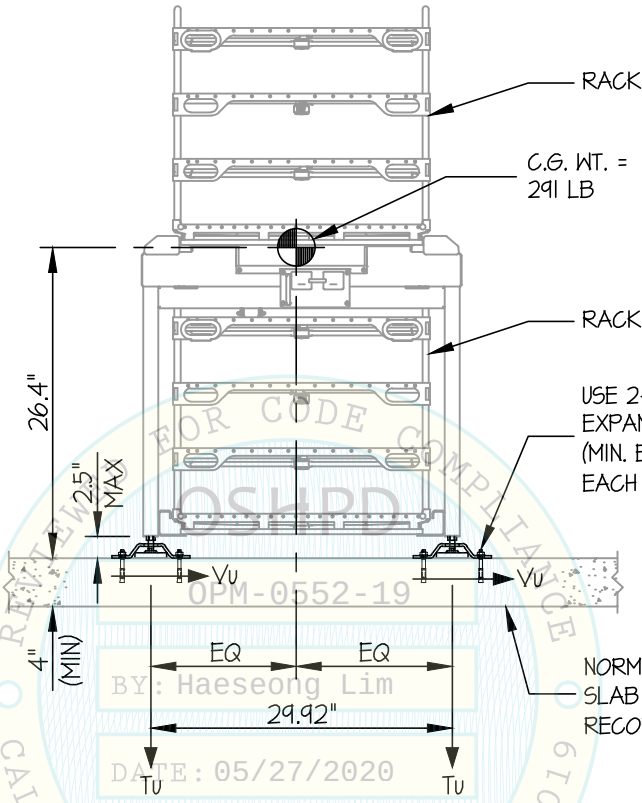
ATLAS WAV
SINGLE STORAGE TABLE ASSY
W/ TWO LOADED RACKS

DES.	J. ROBERSON
JOB NO.	14-1904
DATE	5/15/20

SHEET 3 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



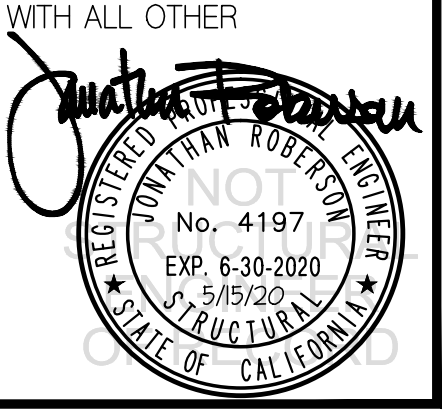
Tu = 118 LB/BOLT (MAX)
Vu = 70 LB/BOLT (MAX)
(VALUES INCLUDE Ω_0)

FRONT ELEVATION

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, Ω_0 = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 0.99 W_p
   HORIZONTAL FORCE (E_{mh}) = 1.49 W_p (FOR CONCRETE ANCHORAGE)
   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.
4. SEE GENERAL NOTES: SHEETS 1 AND 2



STERIS CORPORATION

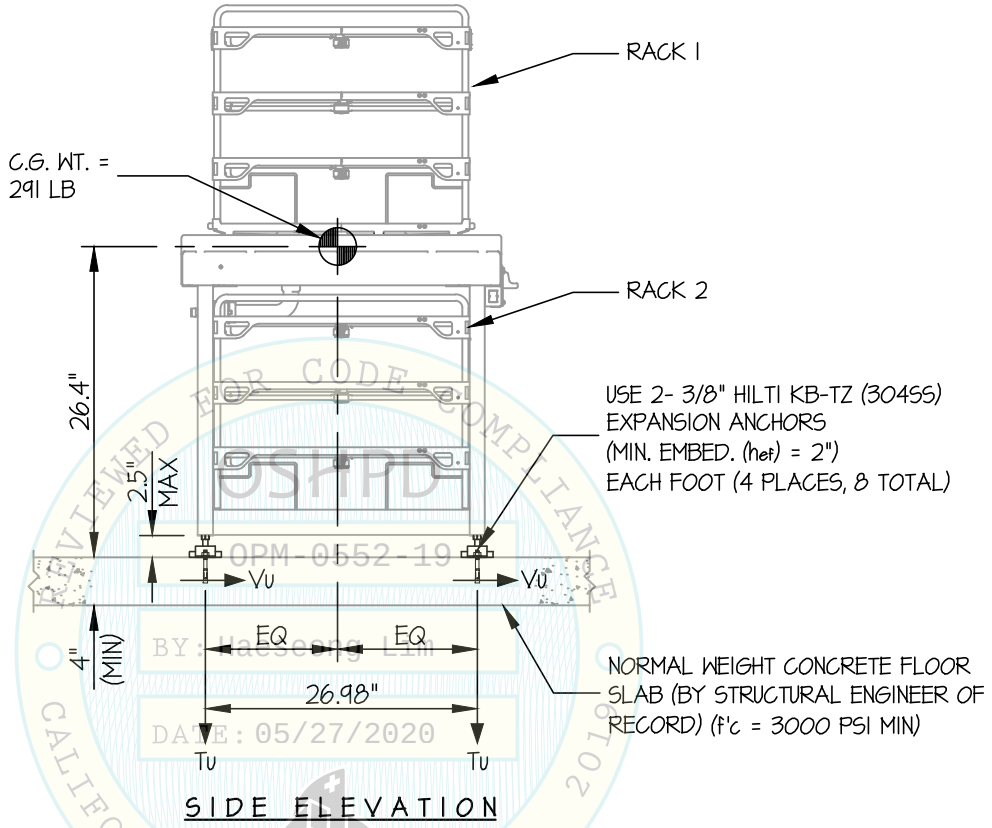
ATLAS WAV
SINGLE STORAGE TABLE ASSY
W/ TWO LOADED RACKS

DES. J. ROBERSON
JOB NO. 14-1904
DATE 5/15/20

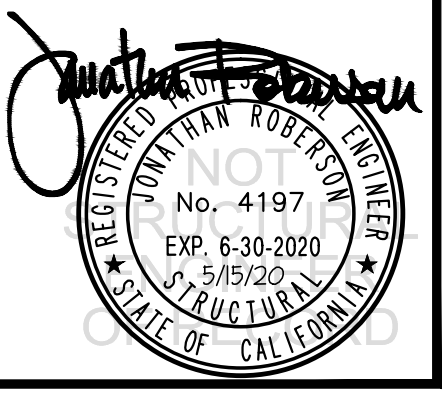
SHEET 4 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



SIDE ELEVATION



STERIS CORPORATION

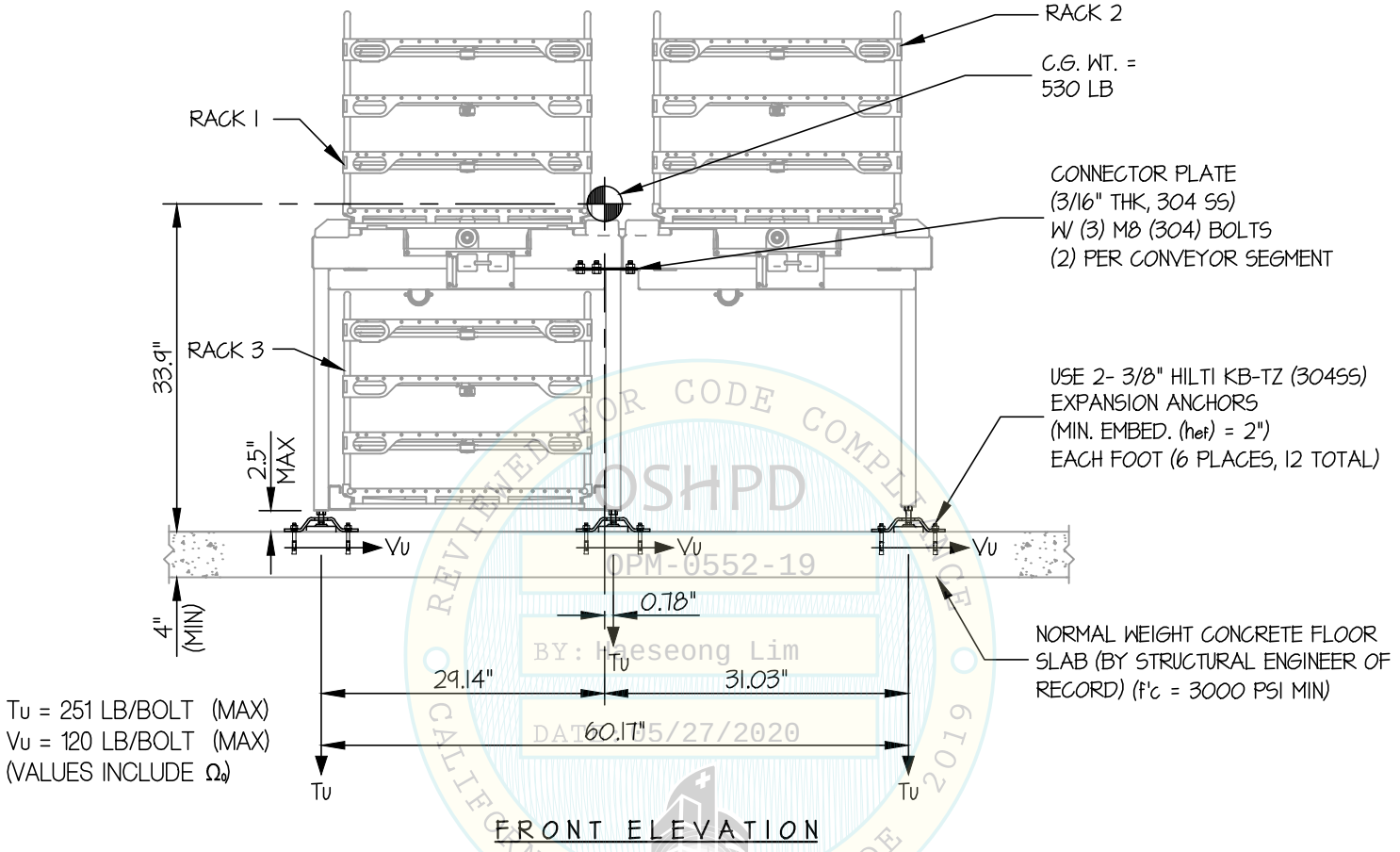
ATLAS WAV
DOUBLE STORAGE TABLE ASSY
W/ TWO LOADED (TOP) & ONE EMPTY (BOTTOM)

DES. J. ROBERSON
JOB NO. 14-1904
DATE 5/15/20

SHEET 5 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



FRONT ELEVATION

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, Ω_o = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 0.99 W_p
   HORIZONTAL FORCE (E_{mh}) = 1.49 W_p (FOR CONCRETE ANCHORAGE)
   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.

4. SEE GENERAL NOTES: SHEETS 1 AND 2

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2020
5/15/20
STRUCTURAL
STATE OF CALIFORNIA

STERIS CORPORATION

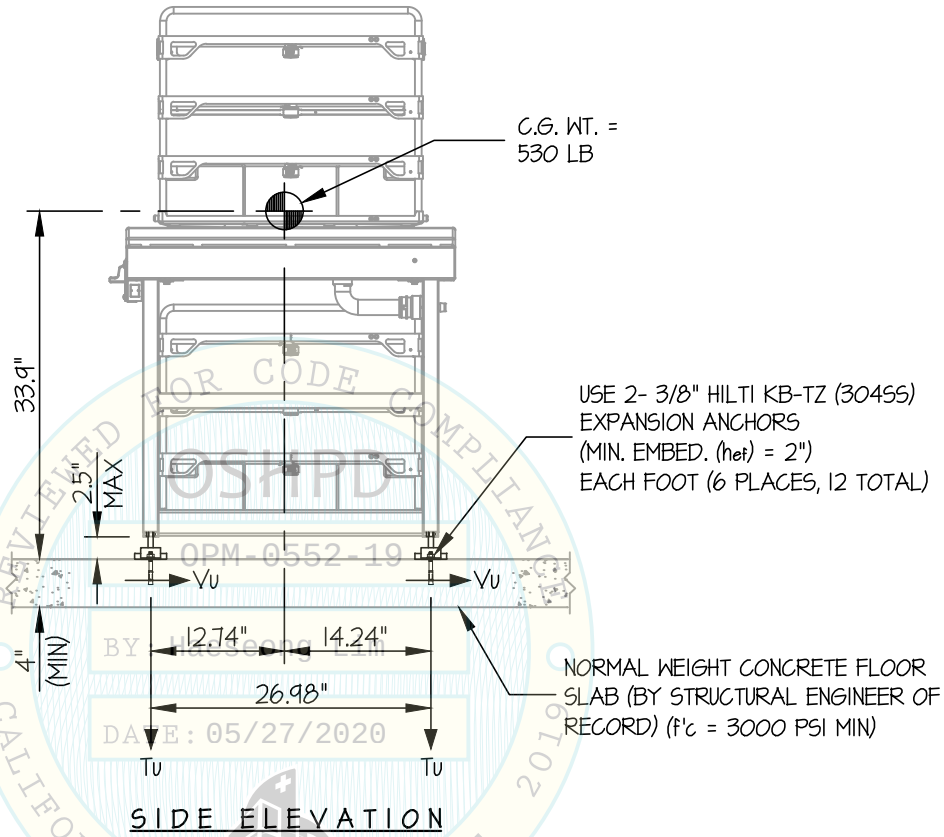
ATLAS WAV
DOUBLE STORAGE TABLE ASSY
W/ TWO LOADED (TOP) & ONE EMPTY (BOTTOM)

DES.	J. ROBERSON
JOB NO.	14-1904
DATE	5/15/20

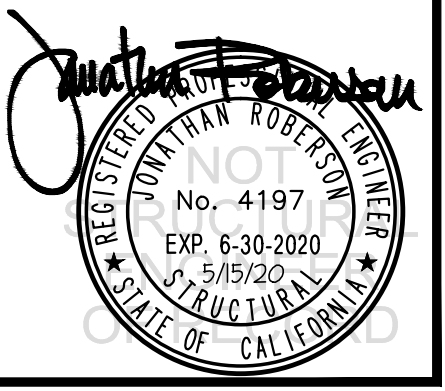
SHEET 6 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



SIDE ELEVATION



STERIS CORPORATION

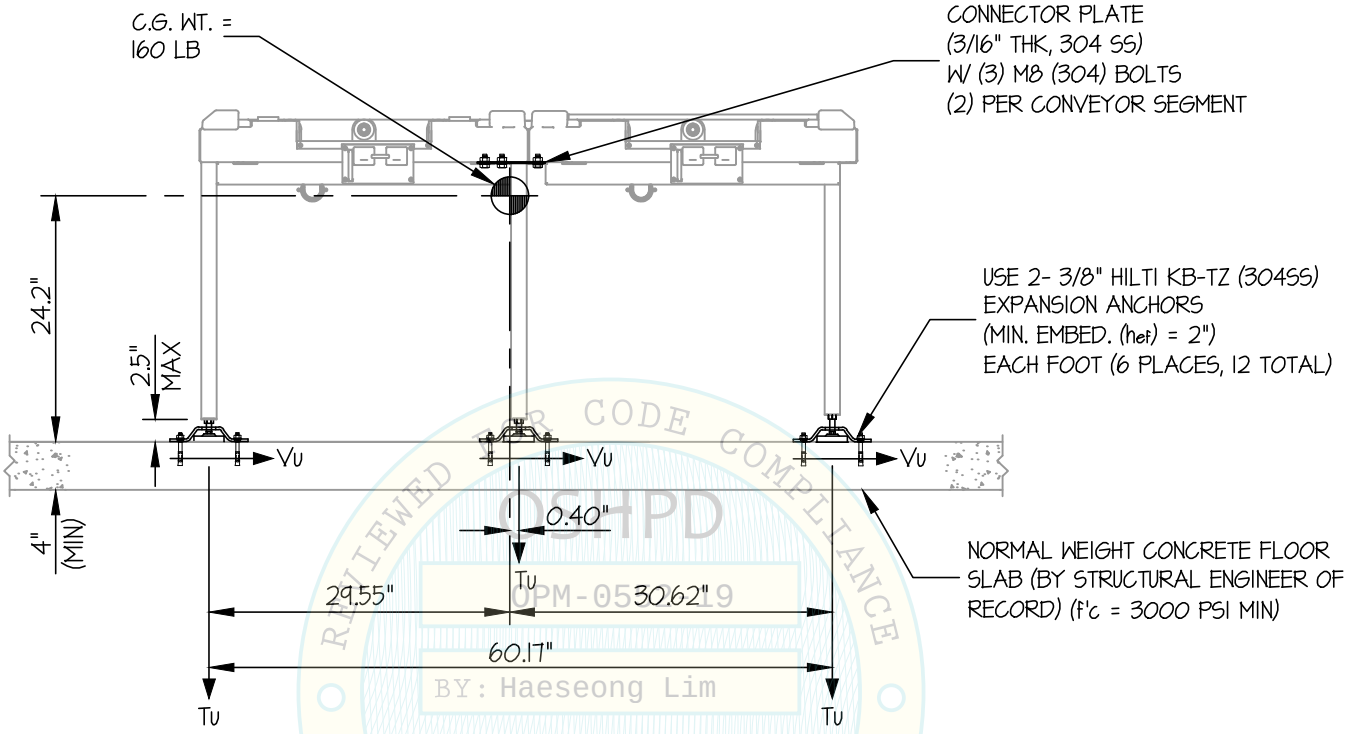
ATLAS WAV
DOUBLE STORAGE TABLE ASSY (EMPTY)

DES. J. ROBERSON
JOB NO. 14-1904
DATE 5/15/20

SHEET 7 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



FRONT ELEVATION

Tu = 52 LB/BOLT (MAX)
Vu = 36 LB/BOLT (MAX)
(VALUES INCLUDE Ω_0)

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, Ω_0 = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 1.58 Wp
   HORIZONTAL FORCE (E_{mh}) = 3.16 Wp (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 Wp

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.

4. SEE GENERAL NOTES: SHEETS 1 AND 2

REGISTERED PROFESSIONAL ENGINEER
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ATLAS WAV
DOUBLE STORAGE TABLE ASSY (EMPTY)

DES. J. ROBERSON
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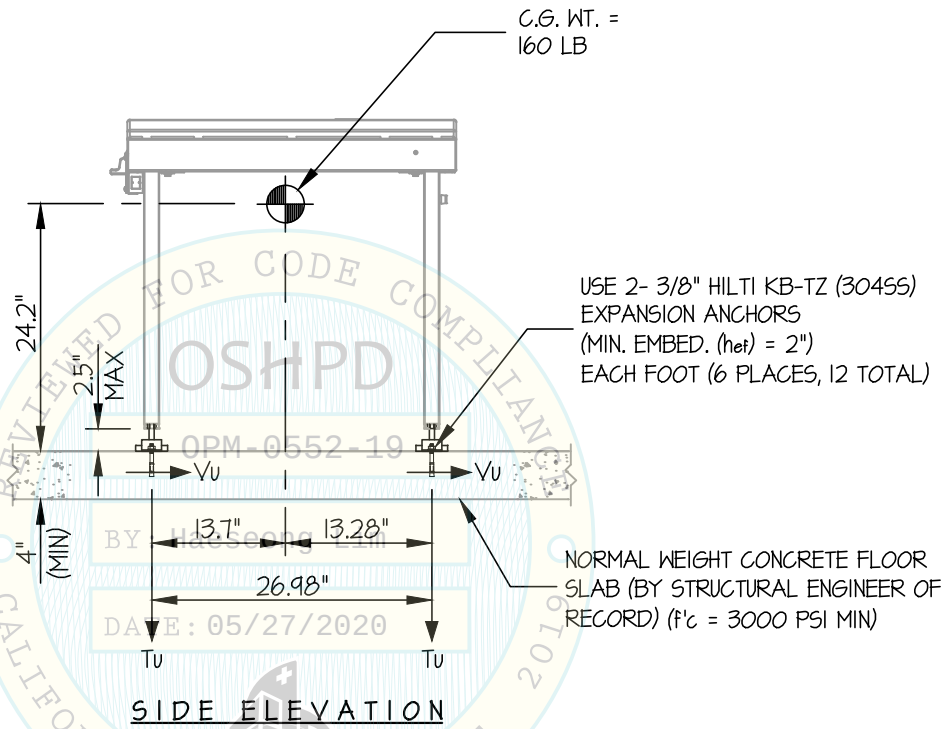
DATE 5/15/20

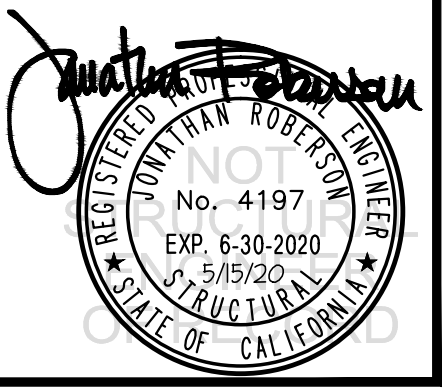
SHEET 8 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



SIDE ELEVATION



STERIS CORPORATION

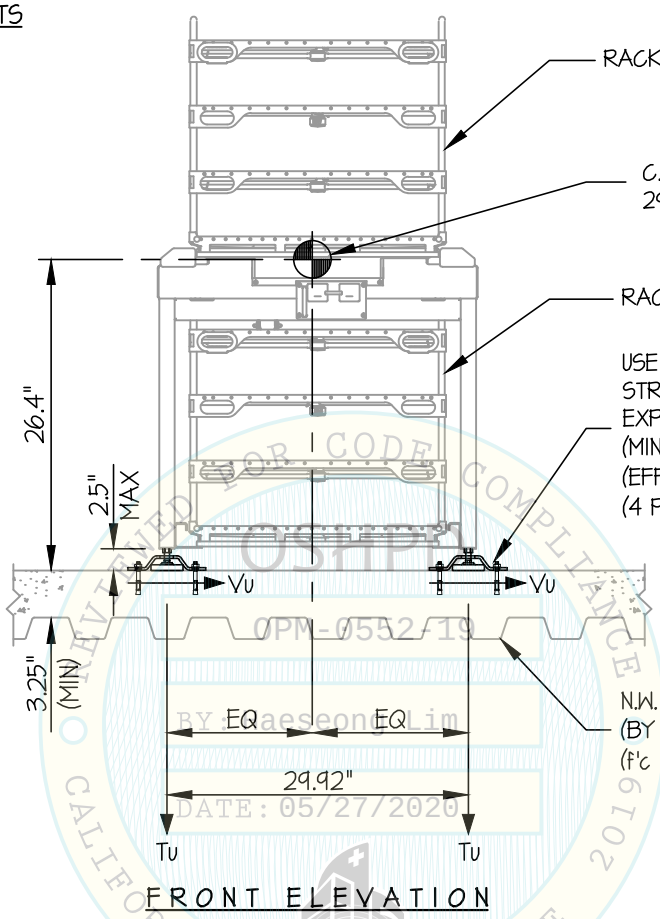
ATLAS WAV
SINGLE STORAGE TABLE ASSY
W/ TWO LOADED RACKS

DES. J. ROBERSON
JOB NO. 14-1904
DATE 5/15/20

SHEET 9 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



FRONT ELEVATION

Tu = 206 LB/BOLT (MAX)
Vu = 120 LB/BOLT (MAX)
(VALUES INCLUDE Ω_0)

NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16.**
   STRENGTH DESIGN IS USED. (S_{DS} = 1.40, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h ≤ 1)

   HORIZONTAL FORCE (E_h) = 1.68 W_p
   HORIZONTAL FORCE (E_{mh}) = 2.52 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.28 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.

4. SEE GENERAL NOTES: SHEETS 1 AND 2

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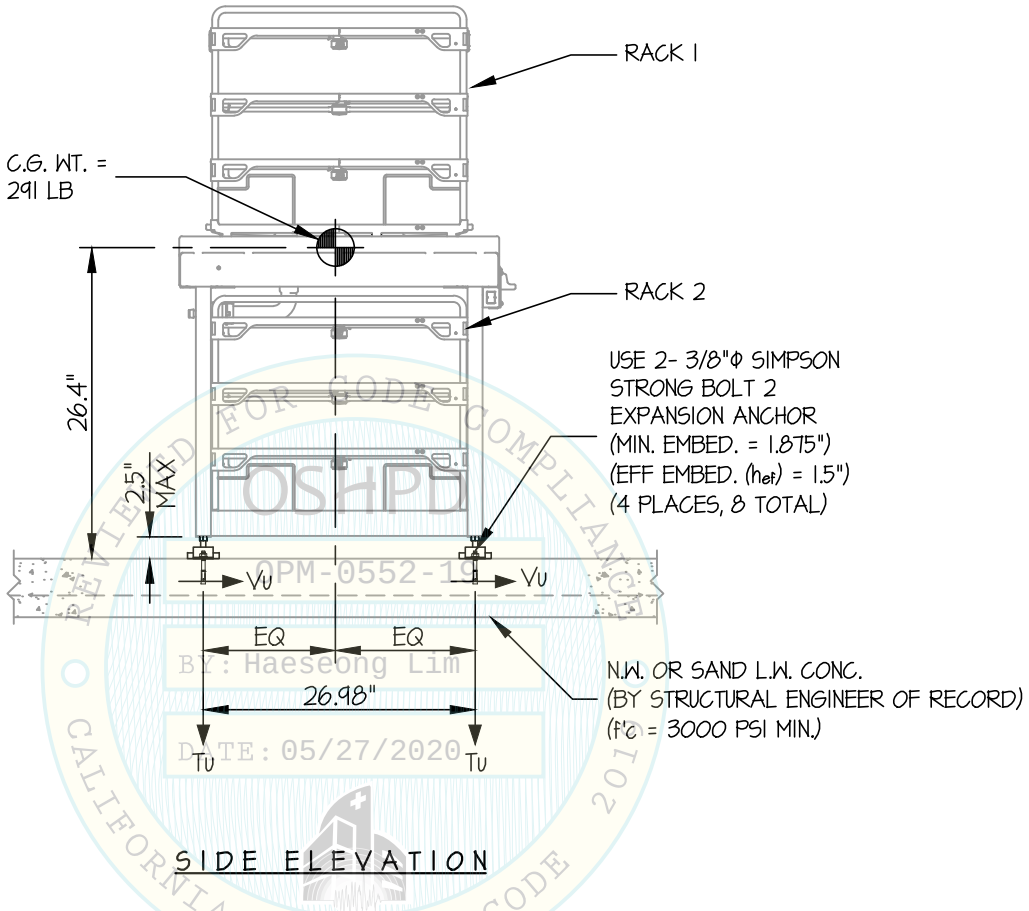
ATLAS WAV
SINGLE STORAGE TABLE ASSY
W/ TWO LOADED RACKS

DES.	J. ROBERSON
JOB NO.	14-1904
DATE	5/15/20

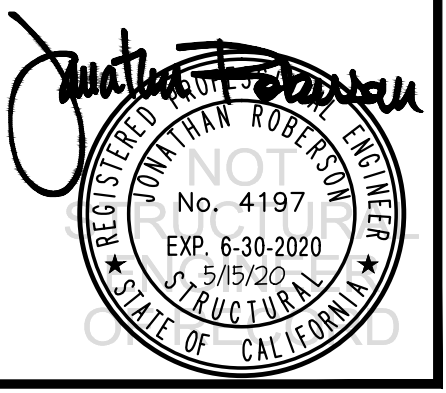
SHEET 10 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



SIDE ELEVATION



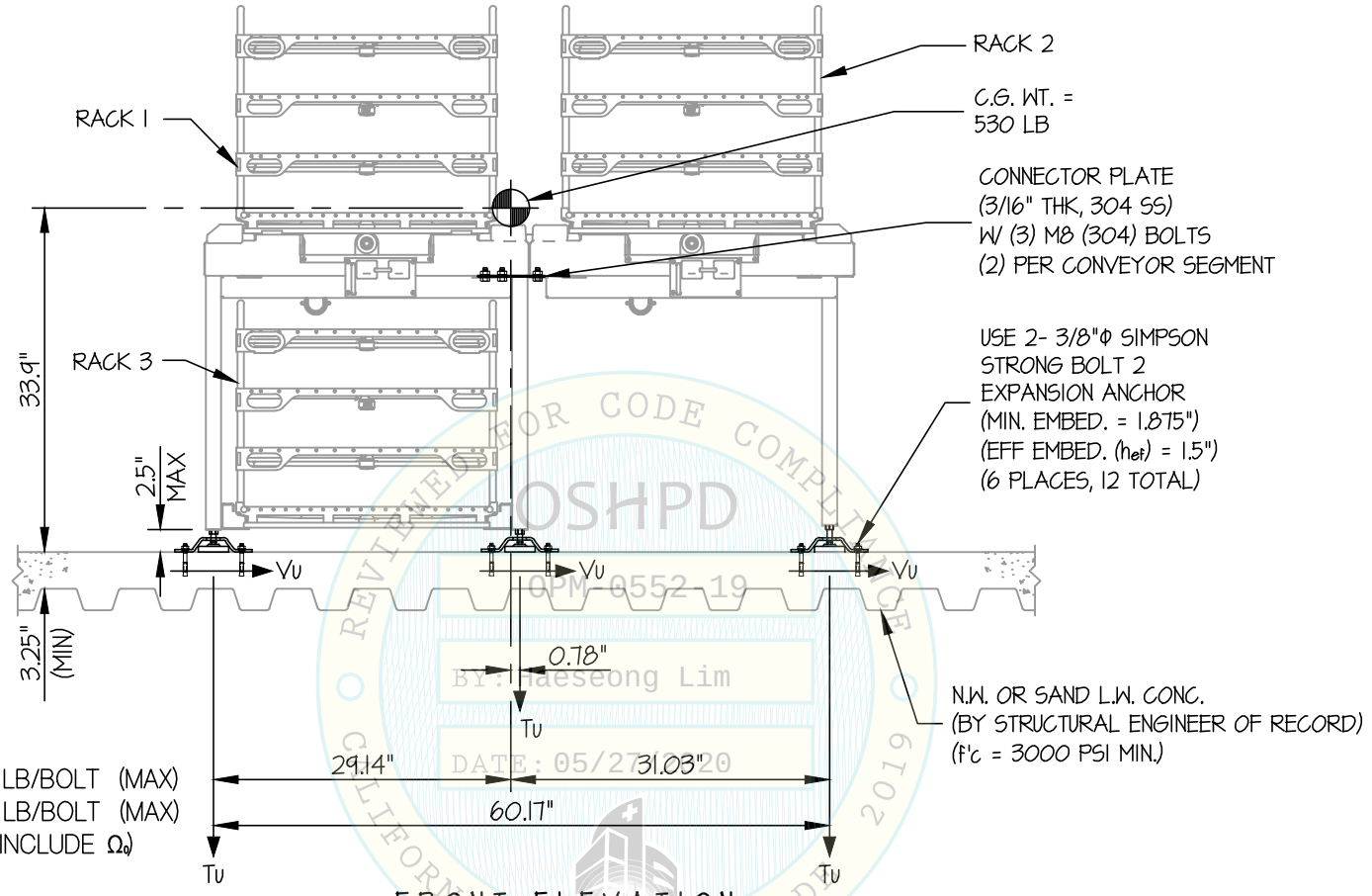
STERIS CORPORATION

ATLAS WAV
DOUBLE STORAGE TABLE ASSY
W/ TWO LOADED (TOP) & ONE EMPTY (BOTTOM)

DES. J. ROBERSON
JOB NO. 14-1904
DATE 5/15/20
SHEET 11 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



FRONT ELEVATION

NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16.**
   STRENGTH DESIGN IS USED. (S_{DS} = 1.40, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_o = 1.5, z/h ≤ 1)

   HORIZONTAL FORCE (E_h) = 1.68 W_p
   HORIZONTAL FORCE (E_{mh}) = 2.52 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.28 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.

4. SEE GENERAL NOTES: SHEETS 1 AND 2

REGISTERED PROFESSIONAL ENGINEER
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5/15/20

STERIS CORPORATION

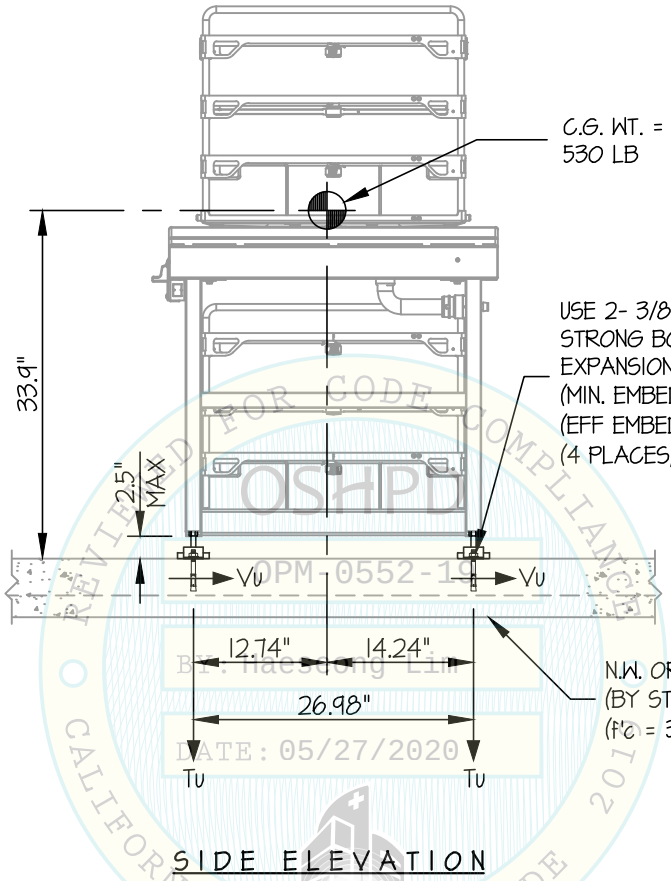
ATLAS WAV
DOUBLE STORAGE TABLE ASSY
W/ TWO LOADED (TOP) & ONE EMPTY (BOTTOM)

DES.	J. ROBERSON
JOB NO.	14-1904
DATE	5/15/20

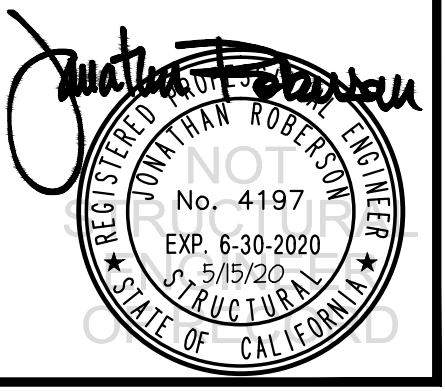
SHEET 12 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



SIDE ELEVATION



STERIS CORPORATION

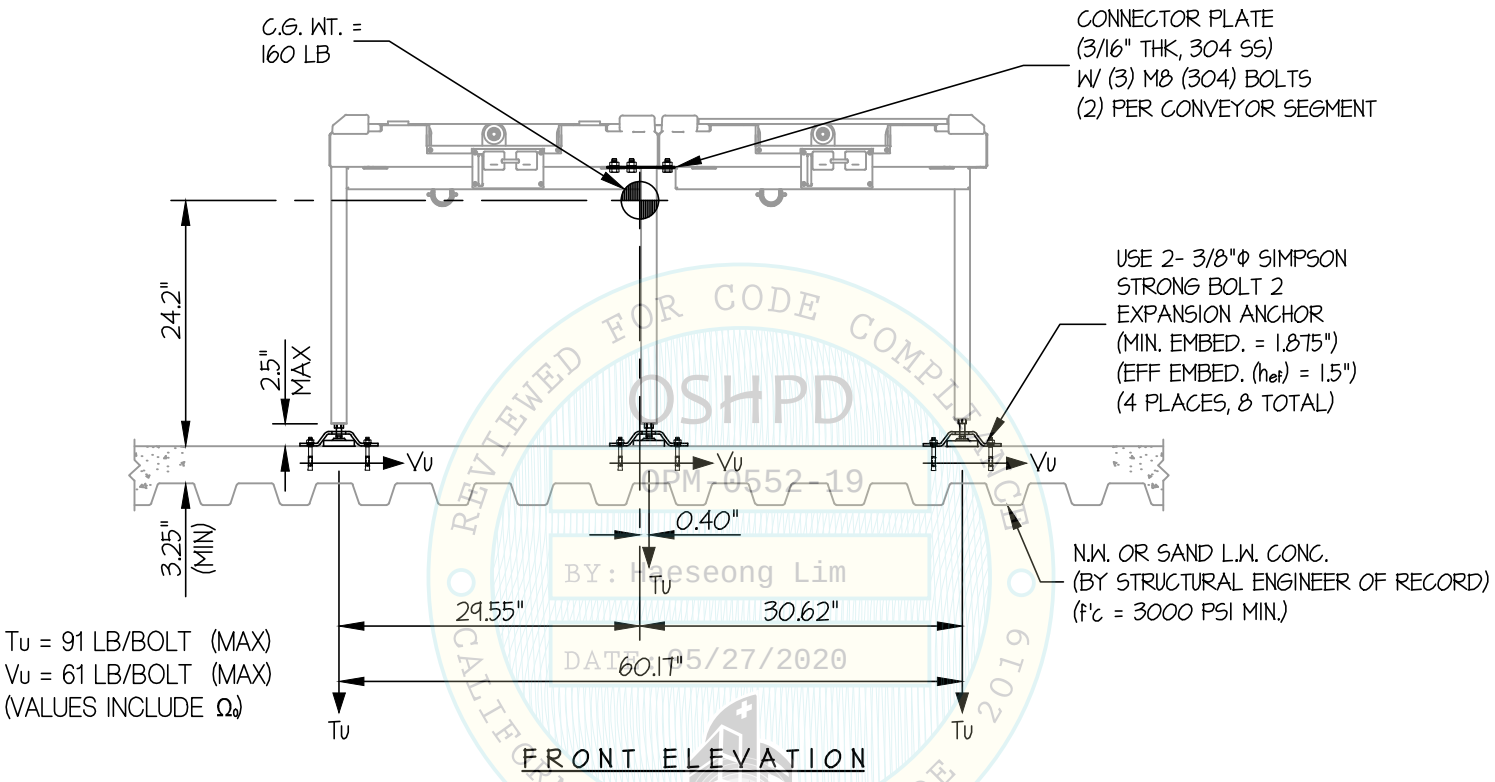
ATLAS WAV
DOUBLE STORAGE TABLE ASSY (EMPTY)

DES. J. ROBERSON
JOB NO. 14-1904
DATE 5/15/20

SHEET 13 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



FRONT ELEVATION

NOTES:

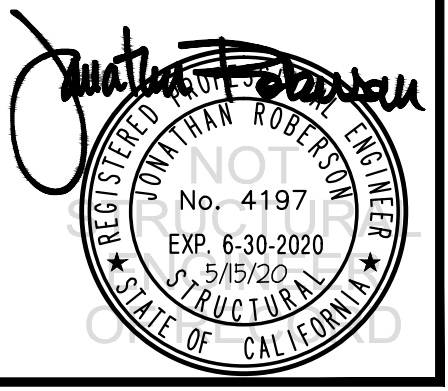
1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16.**
   STRENGTH DESIGN IS USED. (S_{DS} = 1.40, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_o = 1.5, z/h ≤ 1)

   HORIZONTAL FORCE (E_h) = 1.68 W_p
   HORIZONTAL FORCE (E_{mh}) = 2.52 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.28 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.

4. SEE GENERAL NOTES: SHEETS 1 AND 2



STERIS CORPORATION

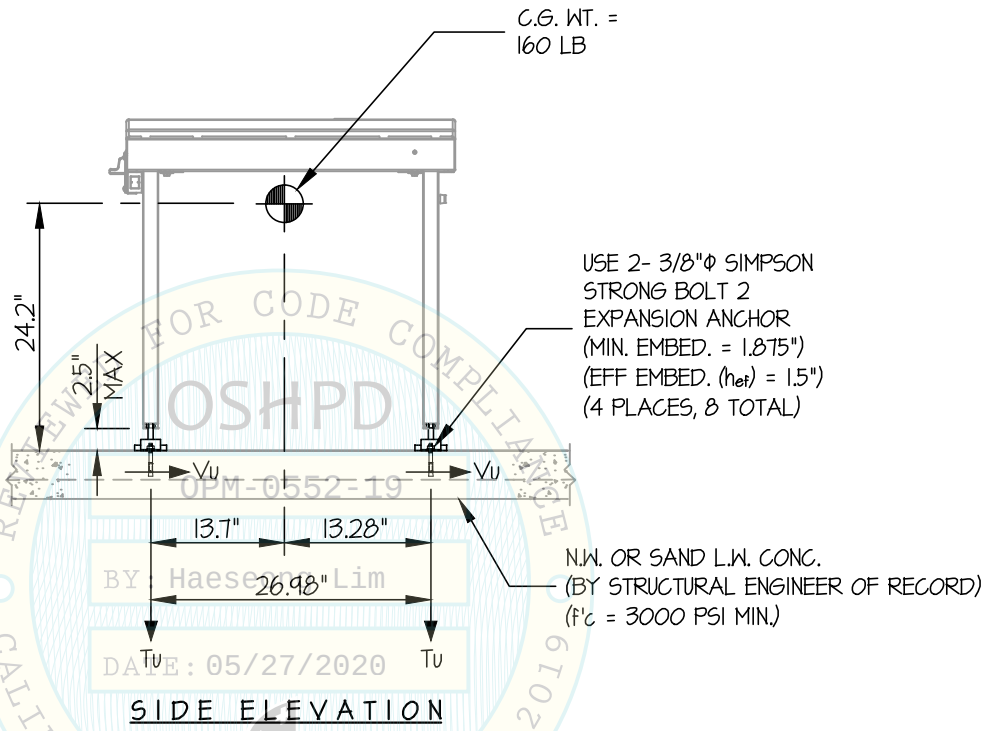
ATLAS WAV
DOUBLE STORAGE TABLE ASSY (EMPTY)

DES. J. ROBERSON
JOB NO. 14-1904
DATE 5/15/20

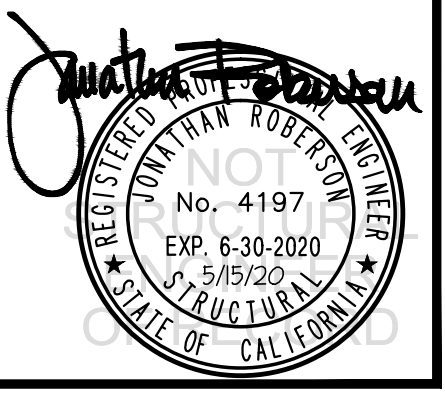
SHEET 14 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



SIDE ELEVATION



STERIS CORPORATION

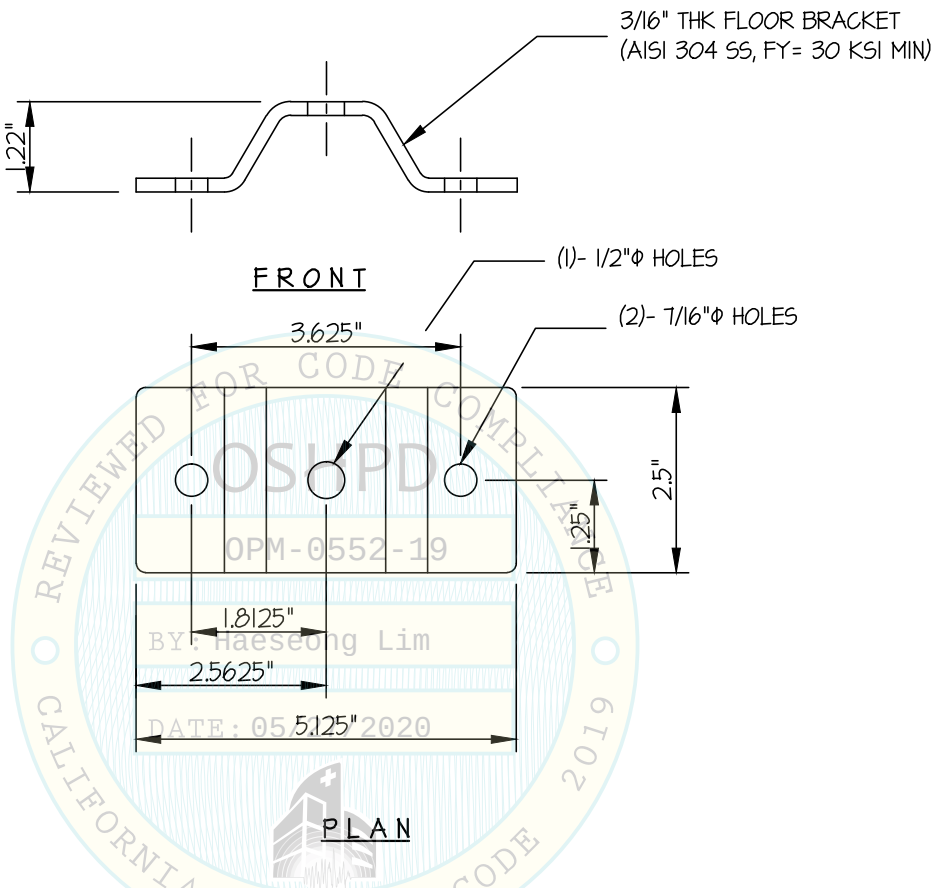
ATLAS WAV
SINGLE / DOUBLE STORAGE TABLE ASSY

DES.	J. ROBERSON
JOB NO.	14-1904
DATE	5/15/20

SHEET 15 OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAILS



FLOOR BRACKET DETAIL